

## SECTION 6

# SITE ACCESS REQUIREMENTS

This section establishes requirements for site access and driveway locations.

- 6-1 **GENERAL** – Driveways shall meet sight distance requirements as discussed in Section 7-12 of this manual for both ingressing and egressing movements. Driveway width, type and design shall conform to this manual and the Construction Standards.

Backing of vehicles out of driveways onto the roadway shall only be permitted for single family residential or duplex land uses. Other land uses shall be designed so both ingressing and egressing vehicles are traveling forward.

Driveways shall be located to provide at least 3 feet between the driveway's traveled way and appurtenances such as fire hydrants, poles, and drop inlets.

The Town recognizes that infill projects (projects within older, previously developed areas) may have certain constraints such as lot size, existing driveways near the property line on adjacent parcels, etc. which may deem it impractical to achieve the requirements contained in this manual for site access. Infill projects such as these will be evaluated on a case-by-case basis by the Town. However, the goal will be to achieve the requirements contained herein to the extent practicable.

*NOTE: Distances discussed below are measured to driveway centerlines. Where distances refer to an intersection, the intersection's point of reference is the near curb return nearest to the driveway.*

- 6-2 **DRIVEWAY LOCATIONS ON MINOR AND PRIMARY RESIDENTIAL STREETS** – For single family residential or duplex, the following shall apply:

- A. Driveways shall be at least 6 feet apart as measured edge to edge, except in cul-de-sac bulbs and the outside portion of elbows, where the minimum shall be 5 feet. For corner parcels, the driveway shall front whichever street is projected to have a lower traffic volume, and the driveway shall be located as far from the curb return as possible, i.e., at the far side of the lot.

Where the residential street intersects a collector or arterial street, the roadways shall be designed such that no driveways occur within 150 feet of said intersection. This may be accomplished by designing a minor residential street parallel to the collector or arterial street and providing access to the lots via said minor residential street. In cases where this is not possible, there shall be no driveways on the residential street within 50 feet of said intersection.

For land uses other than single family residential or duplex, the following shall apply:

- B. Driveways shall be at least 50 feet apart. There shall be no driveways within 150 feet of an intersection. Where residential streets intersect collector or arterial streets, there shall be no driveways on the residential street within 100 feet of said intersection unless otherwise approved by the Town Engineer.

- 6-3 **DRIVEWAY LOCATIONS ON COLLECTOR OR ARTERIAL STREETS** – Driveways fronting roadways which have been classified in the General Plan as principal arterials shall be at least 500 feet apart, shall be right-turn-in, right-turn-out only, and shall have a standard right turn deceleration lane. No portion of a driveway shall be allowed within the straight portion of an acceleration or deceleration lane; however, driveways are permitted within acceleration and deceleration lane tapers. No portion of a driveway shall be allowed within a separate bus turnout, including its tapers.

Driveways shall be at least 200 feet apart on collector streets and at least 250 feet apart on arterial streets. Driveways shall be at least 200 feet from an intersection on collector streets.

- 6-4 **NUMBER OF DRIVEWAYS SERVING A PARCEL OR SITE** – For projects requiring a traffic study, the study shall evaluate the proposed site access for the project. The study shall discuss balancing the number of driveways for the project so the number of driveways is minimized, while still providing a sufficient number of access points to minimize congestion and delay.

- 6-5 **RIGHT TURN DECELERATION/ACCELERATION LANES FOR DRIVEWAYS** – A right turn deceleration lane shall be provided for a driveway if all of the following conditions are met:

- A. The driveway is located on an arterial.
- B. Right turn ingress volume is expected to exceed fifty vehicles during peak hour flows on the roadway. For right turn ingress volumes between ten and fifty vehicles, a right turn curb taper shall be constructed in conformance with the Standard Drawings.
- C. There is ample room and frontage to fit a deceleration lane as determined by the Town Engineer.
- D. The travel speed of the roadway, as determined by the Town Engineer, equals or exceeds 45 mph.

There may be cases where some of the above criteria are not met, but Town staff may still require a deceleration lane in the interest of safety.

There may be cases where it will be necessary to merge a deceleration lane with an existing acceleration lane. Where the beginning of a deceleration taper will be within 100 feet of the end of an acceleration taper, then the deceleration and acceleration shall be merged to form a continuous auxiliary lane.

There may be cases where it is desirable to provide room for right turn deceleration, but an entirely separate deceleration lane is either too difficult to install, due to design constraints, or is not reasonable. In these cases, a right turn curb taper shall be provided in accordance with the Standard Drawings.

Right turn acceleration lanes for driveways shall not be provided.

- 6-6 **LEFT TURN DECELERATION/ACCELERATION LANES FOR DRIVEWAYS** – Left turn deceleration lanes (left turn pockets) are not required on collector or residential streets.

On arterials and expressways and where left turns will be permitted, a left turn deceleration lane shall be provided. This may be in the form of a separate left turn pocket on a six-lane road, or a continuous two-way-left-turn-lane on a two or four-lane road. The minimum left turn pocket length shall be 200 feet plus a 120 foot entry taper. Longer left turn pockets may be required if a traffic study demonstrates the need.

Separate left turn acceleration lanes may be required by the Town Engineer for traffic safety.

6-7 **MINIMUM OFFSET FOR OPPOSING DRIVEWAYS** – For land uses other than single family residential or residential duplex, the centerline of driveways on opposite sides of the street shall either be direct line or have a minimum offset distance as listed below (measured from the centerline of the driveways):

- A. For driveways on minor and primary residential streets, the minimum offset shall be 150 feet.
- B. For driveways on collectors, the minimum offset shall be 250 feet, or as approved by the Town Engineer.
- C. For driveways on arterials and expressways, the minimum offset shall be as approved by the Town Engineer.

Where a raised median is provided along the center of the street separating conflicting turning movements, the offset requirements as stated above will not apply.

6-8 **RESTRICTED TURNING MOVEMENTS FOR DRIVEWAYS** – Turning movement restrictions shall apply to unsignalized driveways on arterial and expressway streets as listed below:

- A. Left turns out of driveways onto six-lane roads shall be prohibited.
- B. On six-lane roads, driveways within 400 feet of an intersection containing left turn pockets shall be right turn in, right turn out only. No driveways will be permitted in the bus turnout or deceleration/right turn lane without consent of Town Engineer.
- C. On six-lane roads, left turns into driveways may be allowed if all of the following conditions are met:
  - 1. The standard left turn lane length and bay taper can be achieved.
  - 2. Opposing traffic will not queue to the point of blocking the left turn in movement. Such a queuing calculation shall be provided by the consultant preparing the traffic study for the project.
  - 3. The driveway is at least 400 feet downstream and 600 feet upstream of an intersection containing left turn pockets.
- D. Turning movements may be restricted for any driveway where deemed necessary by the Town Engineer because of safety concerns.
- E. On 4 lane roads, left turns into driveways may be allowed if the driveway is at least 400 feet downstream and 600 feet upstream of an intersection containing left turn pockets.
- F. On 4 lane roads, left turns out of driveways may be allowed if the driveway is at least 500 feet downstream and 600 feet upstream of an intersection containing left turn pockets.
- G. On 4 lane roads, full turning movements may be allowed for driveways that are at least 250 feet from minor intersections, provided, the above criteria are met.
- H. Turning movements on 2 and 4 lane roads may be restricted for any driveway where deemed necessary by the Town Engineer because of safety concerns.
- I. Turning movements on any future 6 lane roads shall be approved by the Town Engineer.

- 6-9**     **SIGNALIZED DRIVEWAYS** – The need for traffic signals at driveways shall be based on warrants contained in the latest edition of the Caltrans Traffic Manual. Any such evaluation shall be performed by the consultant as a part of the traffic study for the project.

For a more detailed description of a traffic signal needs assessment, refer to Section 4-2(I) in that section. The Town will typically deny a request for a new signal if spacing requirements cannot be met.

Attention is also directed to Section 5-2(H) for minimum required throat depth (MRTD) for signalized access locations.

The Town does not share in the cost of design and construction of traffic signals which solely serve private property (i.e. a "tee" intersection where the driveway is situated as the "stem" of the "tee"). The developer shall bear all costs of providing signalization at the private access point, including design and construction. In the case where a private access point comprises the fourth leg of an intersection where the other three legs are public streets, the developer shall ultimately be 100% financially responsible for the private leg (or approximately one-fourth the cost of signalizing the intersection). This obligation is in addition to sharing in the cost of the remaining signal via payment of the Town's Traffic Mitigation Fee (if applicable).

See Section 8 of this manual for more information on traffic signals.

- 6-10**     **MINIMUM REQUIRED THROAT DEPTH** – Driveway shall meet the minimum required throat depth (MRTD) requirements as discussed in Section 5-2(H) of this manual. In the case of "drive-thru" facilities, attention is directed to the latter part of Section 5-2(H) for minimum on-site storage distances for ingressing vehicles.

On-site parking shall not be permitted within the MRTD area. The MRTD requirement does not apply to single family residential or duplex land uses.

In cases where a traffic study is not required, or in cases where there is insufficient data available to calculate the MRTD in accordance with Section 5-2(H), Table 6-1 shall be used to determine minimum required throat depth for access points for a site. In cases where a traffic study will be provided, but the access points have not yet been determined for a site, Table 6-1 shall be used to estimate the MRTD during the site design process. In these cases, the final MRTD requirements shall be determined by the traffic study via the methodology in Section 5-2(H). The distances shown in Table 6-1 chart represent vehicle storage equivalents, which means the total required distance may be achieved by summing the throat depths for several access points if more than one access point is to serve the site. In these cases, the distance shown in Table 6-1 shall be prorated to each access point to the nearest 25 feet based on the estimated relative percent usage of each access point.

- 6-11**     **PARKING REQUIREMENTS** – Refer to Chapter 13.36 – Parking and Loading of the Town of Loomis Municipal Code – Title 13 Zoning Ordinance.

**TABLE 6-1  
MINIMUM THROAT DEPTH**

LAND USE	SIZE			STREET RIGHT-OF-WAY		
				<60'	60'	>60'
Apartment, Condos, Mobile Homes, Planned Unit Development	0	-	80 units	25'	50'	50'
	81	-	160 units	50'	50'	50'
		>	160 units	50'	50'	100'
Quality Restaurant	0	-	15,000 SF	25'	25'	25'
		>	15,000	25'	25'	50'
High Turnover/Sit Down Restaurant	0	-	8,000 SF	25'	25'	25'
Drive-Thru Restaurant	0	-	2,000 SF	25'	25'	25'
	2,001	-	3,000	25'	50'	100'
	3,001	-	5,000	50'	75'	150'
		>	5,000	75'	100'	225'
Motel	0	-	150 rooms	25'	25'	25'
	151	-	400	25'	75'	125'
		>	400	25'	125'	175'
Convention Hotel	0	-	150 rooms	50'	50'	100'
	151	-	400	50'	150'	250'
		>	400	50'	250'	350'
Office Park	0	-	20,000 SF	25'	25'	25'
	20,001	-	50,000	25'	50'	75'
	50,001	-	100,000	25'	75'	175'
	100,001	-	150,000	75'	125'	250'
	150,001	-	300,000	125'	250'	500'
		>	300,000	200'	400'	825'
General Office	0	-	50,000 SF	25'	25'	50'
	50,001	-	100,000	25'	50'	100'
	100,001	-	150,000	50'	75'	175'
	150,001	-	200,000	50'	100'	225'
	200,001	-	300,000	75'	175'	350'
	300,001	-	400,000	125'	225'	450'
		>	400,000	150'	275'	575'

**TABLE 6-1 (continued)**  
**MINIMUM THROAT DEPTH**

LAND USE	SIZE			STREET RIGHT-OF-WAY		
				<60'	60'	>60'
Light Industrial	0	-	100,000 SF	25'	25'	50'
	100,001	-	200,000	25'	50'	100'
	200,001	-	300,000	50'	75'	150'
	300,001	-	400,000	50'	100'	200'
		>	400,000	75'	125'	250'
Industrial Park	0	-	500,000 SF	25'	25'	50'
Discount Store	0	-	30,000 SF	25'	25'	25'
	30,001	-	50,000	25'	50'	75'
	50,001	-	75,000	25'	50'	125'
		>	75,000	50'	75'	175'
Shopping Center	0	-	10,000 SF	25'	25'	50'
	10,001	-	20,000	25'	50'	125'
	20,001	-	30,000	50'	100'	175'
	30,001	-	40,000	75'	125'	225'
	40,001	-	100,000	75'	150'	250'
	100,001	-	150,000	100'	175'	375'
	150,001	-	200,000	125'	250'	500'
	200,001	-	250,000	150'	300'	625'
	250,001	-	600,000	175'	375'	750'
	600,001	-	700,000	200'	375'	750'
	700,001	-	800,000	225'	425'	875'
	800,001	-	900,000	250'	500'	975'
	900,001	-	1 million	275'	550'	1075'
		>	1 million	425'	825'	1625'
Drive-In Bank	0	-	10,000 SF	25'	25'	50'
	10,001	-	20,000	50'	50'	200'
	20,001	-	30,000	75'	150'	300'
	30,001	-	40,000	100'	200'	400'
		>	40,000	150'	250'	500'
Supermarket	0	-	20,000 SF	25'	25'	50'
	20,001	-	30,000	25'	50'	75'
	30,001	-	40,000	25'	50'	100'
		>	40,000	25'	75'	150'
Medical Clinic	0	-	100 employees	25'	25'	50'

## SECTION 7

# STREETS

- 7-1 **STREET CLASSES AND DESIGN WIDTHS** - For purposes of geometric and structural design, streets shall be classified according to the following requirements, the appropriate Standard Drawings, and Table 7-1. Specific streets that fall under the Downtown Center Area Plan shall follow those design standards and guidelines. Additional design requirements can be found under Section 2, Subdivision Regulations (Title 14, Ordinance 185).
- A. **20-Foot Street (Alley)** - A street depressed in the center with a right of way and surface width of 20 feet. *STD DWG H-38*
  - B. **CLASS C Street Section** - A street that is used for RA, RE and RR zoning for four or less parcels. The street width varies from 20 to 24 feet with graded shoulders. Right-of-way width of 50 feet unless determined by the Town Engineer that additional right-of-way is required. *STD DWG H-17*
  - C. **CLASS A&B Street Section** - A street that is used for RA, RE and RR zoning for fifty or less parcels. The street width varies from 20 to 28 feet. Right-of-way width of 50 feet unless determined by the Town Engineer that additional right-of-way is required. *STD DWG H-17*
  - D. **Minor Residential** (ex. Rachel Lane) - A street with known beginning and ending points servicing 50 or fewer lots shall be classified as a minor residential street. Minor residential streets shall have a right of way width of 50 feet and a back-of-curb to back-of-curb width of 38 feet unless approved otherwise by Town Council action. *STD DWG H-18*
  - E. **Primary Residential** (ex. Arcadia Avenue) - A residential street servicing more than 100 lots, but no more than 500 lots, or along which schools or parks are proposed to front shall be classified as a primary residential street. Primary residential streets shall have a right of way width of 50 feet and a back-of-curb to back-of-curb width of 42 feet. *STD DWG H-18*
  - F. **Collector/Industrial/Commercial** (ex. Swetzer Road) - A street servicing an industrial/commercial subdivision or a residential subdivision along which no home frontage is allowed shall be classified as a collector/industrial street. Collector/industrial streets shall have a right of way width of 56 feet for residential and 60 feet for commercial/industrial and back-of-curb to back-of-curb width of 48 feet. Additional right of way and pavement shall be provided at intersections for acceleration, deceleration, bus turnouts, and turn lanes, as specified by the Town Engineer. *STD DWG H-18*
  - G. **Minor Arterial** (ex. Taylor Road) - Those roads specified in the Town's Capital Improvement Program as requiring a four lane roadway shall be classified as minor arterials. Minor arterials shall have a right of way width of 88 or 90 feet with right of way at back of sidewalk. Additional right of way and pavement may be required for bus turnouts and at intersections and driveways for acceleration lanes, deceleration lanes, and dual left turn lanes, as specified by the Town Engineer. Additional right of way shall also be provided if sidewalks are not included in a landscape/pedestrian easement adjacent to the back of curb. *STD DWG H-19*
  - H. **Major Arterial** (ex. Sierra College Boulevard) - Those roads specified in the Town's Capital Improvement Program as requiring a six lane roadway shall be classified as major arterials. Major arterials shall have a right of way width minimum of 114' feet with right of way at back of sidewalk. Additional right of way and pavement may be required for bus turnouts and at

intersections and driveways for acceleration lanes, deceleration lanes, and dual left turn lanes, as specified by the Town Engineer. Additional right of way shall also be provided if sidewalks are not included in a landscape/pedestrian easement adjacent to the back of curb. *STD DWG H-19*

- 7-2 **RIGHT-OF-WAY WIDTH** - Right of way widths shall be in accordance with these standards for the street classification under consideration (see Table 7-1) or as determined by the Town Engineer. In no instance, without approval of the Town Engineer, shall a street have a right-of-way width that is less than the street of which it is a continuation. Right-of-way requirements for widening at intersections shall be as specified by the Town Engineer.

- 7-3 **STRUCTURAL SECTION** - All roads, both public and private, to be constructed within the Town shall be asphalt concrete (AC) over aggregate base (AB) and, if necessary, aggregate sub-base (AS). Asphalt concrete shall be Type B as specified in Caltrans Standard Specifications.

All pavement sections shall be designed on the basis of the resistance R-value as determined in accordance with the State of California, Department of Transportation, design method and appropriate traffic indices (TI). If the subgrade has an "R" value of 15 or less, a geotextile fabric shall be installed on subgrade prior to placement of AB or AS material. In addition, the Town Engineer may require the installation of edge drains in soils where the "R" value of the subgrade is 10 or less. The Geotechnical Engineer may submit for treatment of the subgrade material with lime or cement if suitable soils exist.

This may be considered in lieu of geotextile fabric and base material with approval of the Engineer.

Minimum TI values shall be as specified in Table 7-2 or as approved by the Town Engineer. The minimum structural section is based on an R value of 50 for the given TI values. Design TI and structural section shall be based on project specific information.

**TABLE 7-1  
STREET GEOMETRIC REQUIREMENTS**

CLASS	RIGHT OF WAY WIDTH	BACK TO BACK OF CURB WIDTH	RADIUS OF CURB RETURN @ RIGHT OF WAY @ BACK OF CURB	NUMBER OF TRAVEL LANES	MINIMUM CENTERLINE RADIUS FOR HORIZONTAL CURVE
Class C	50 feet	N/A	22 feet	2	250 feet
Class A&B	50 feet	Varies	22 feet	2	250 feet
Minor Residential	50 feet	38 feet	Residential 22 feet	2	250 feet
Primary Residential	50 feet	42 feet	Residential 22 feet	2	300 feet
Collector/Industrial/Commercial	56*/60 feet	48 feet	Collector/Industrial 26 feet	2	500 feet
Minor Arterial	88/90 feet**	76/78 feet**	Residential 31 feet Collector/Industrial 31 feet	4***	1,000 feet
Major Arterial	114 feet**	102 feet**	Arterial w/o Accel Lane 50 feet Arterial w/Accel Lane 62 feet	6***	2,000 feet

Note\* 60 feet for commercial/industrial to allow for 6 foot sidewalk.

Note\*\* At intersections, additional right of way and pavement may be required. See the Standard Drawings for requirements at intersections.

Note\*\*\* Where fewer than the ultimate number of lanes are to be initially constructed and additional lanes are to be constructed with Traffic Mitigation Fees at some future date, curb and gutter shall be placed at its ultimate location and an extra wide raised median provided.

NOTE: SEE CONSTRUCTION STANDARDS DETAIL H-O FOR INFORMATION ON PRIVATE STREETEASEMENT WIDTH

TABLE 7-2

STREET CLASSIFICATION CLASS A & B	MINIMUM TRAFFIC INDEX	MINIMUM STRUCTURAL SECTION (assumes R=50)		
		AC	AB	AS
CLASS C	5.0	2"	4"	
CLASS A & B	5.0	2"	6"	
MINOR RESIDENTIAL	6.0	3"	6"	
PRIMARY RESIDENTIAL	6.5	3"	6"	
COLLECTOR	7.5	3"	8"	
INDUSTRIAL/COMMERCIAL	8.0	3"	6"	6"
MINOR ARTERIAL (90 R/W)	9.0	4"	6"	6"
MAJOR ARTERIAL (114 R/W)	10.0	4"	6"	8"
ARTERIAL (TRUCK ROUTE)	11.0	6"	6"	10"

- A. **On-site Structural Sections** - On-site pavement sections shall be designed by a registered Geotechnical Engineer. The minimum longitudinal slope shall be 1 percent. Written certification of pavement grade by a licensed Civil Engineer or Surveyor and certification of the structural section and compaction by a Geotechnical Engineer shall be required prior to the issuance of a Certificate of Occupancy. The Geotechnical Engineer shall be on-site to monitor parking lot grading and to certify compaction, thickness of the base, and placement of the asphalt. The minimum structural section shall be 3" AC on 6" AB.

7-4 **CURB AND GUTTER REQUIREMENTS** - Curb and/or gutter are required adjacent to all public streets. All curb and gutter shall be portland cement concrete, Class "A", six sack and shall conform to the Standard Drawings.

- A. **Type 1 Curb and Gutter** - Type 1 curb and gutter shall be installed adjacent to all single family residential and duplex developments. A minimum of 4-inches of aggregate base shall be placed under the curb and gutter. *STD DWG H-2*
- B. **Type 2 Curb and Gutter** - Type 2 curb and gutter shall be installed adjacent to all multiple residential, industrial/commercial developments, school and park sites, all arterials, or as specified by the Town Engineer. A minimum of 4 inches of aggregate base shall be placed under the curb and gutter. *STD DWG H-2*
- C. **Valley Gutter** - Valley gutter may be used for alleys and parking lots. Valley gutter shall not be used in either public or private streets. *STD DWG H-7 & H-38*
- D. **Cross Gutters** - Cross gutters shall not be installed unless the intersection cannot be drained by an underground system. Installation of cross gutters shall be subject to the approval of the Town Engineer. *STD DWG H-1*

7-5 **SIDEWALK REQUIREMENTS** - Sidewalks shall be constructed adjacent to all public streets. All sidewalks shall be portland cement concrete, Class "A", six sack. Sidewalk adjacent to Type 1 and 2 curb and gutter shall be constructed with 4 inches concrete and 4 inches aggregate base. (*STD DWG H-2*)

- A. **Width** - The required width of sidewalks shall be as listed in Table 7-3 unless the project is located within a Specific Design area. In such case, the sidewalk width shall conform to the appropriate Specific Design Landscaping Guideline, which may be obtained from the Town of Loomis Public Works Department. The width of the curb shall not be considered as included in the width of the sidewalk.

TABLE 7-3

STREET CLASSIFICATION	MINIMUM SIDEWALK WIDTH
Minor Residential	4.0 feet
Primary Residential	
Collector/Industrial	4-6 feet
Commercial Minor Arterial Major Arterial	6.0 feet
Downtown	varies

- B. **Slopes** -- Sidewalks not adjacent to back of curb shall have a maximum slope in the direction of travel of 5.0 percent unless otherwise approved by the Town Engineer. Cross slope shall be a minimum of 1.0 percent or maximum 2.0 percent towards the gutter.
- C. **Sidewalk Ramps** - Sidewalk ramps shall be provided at all intersections and commercial/industrial driveways. All ramps shall conform to the requirements of Title 24 of the Office of the State Architect and to the Standard Drawings. It is the design engineer's responsibility to ensure that the intersection slopes designated on the improvement plans will allow for the construction of sidewalk ramps that meet the above criteria.
- At "T" intersections located on collector signalized arterial streets, ramps shall be constructed in the appropriate positions on the side of the through street, directly opposite the ramps at the curb returns of the "T" intersecting street.
- D. **Sidewalk Barricades** - Sidewalk barricades shall be required where satisfactory provisions cannot be made for pedestrians to safely continue beyond the terminus of the sidewalk. Where sidewalks end in fill areas, the fill shall be extended beyond the end of the sidewalk for a minimum distance of six feet.

7-6 **DRIVEWAYS** - When driveways are abandoned or relocated, the driveway section shall be removed and replaced with curb, gutter, and sidewalk (if required) conforming to these standards. All new driveways shall conform to the following requirements.

A. **Types, Widths, and Grades**

1. Single Family Residential and Duplex Driveways shall have a minimum throat width of 12 feet and maximum throat width of 32 feet.

Residential driveways should not exceed a maximum slope of 14 percent from back of right of way. Unusual terrain conditions may warrant waiver of this requirement subject to the approval of the Town Engineer.

2. Multiple Family and Commercial/Industrial Driveways shall have a minimum throat

width of 25 feet and a maximum throat width of 40 feet. The minimum throat width may be reduced to 25 feet if the driveway is restricted to one-way traffic either entering or exiting the site. If a raised median is provided in the driveway throat, the driveway width may be widened to provide two 20-foot aisles. The minimum driveway median width shall be 4 feet. The nose of the median shall be no less than 7 feet and no more than 15 feet from the gutter flow line.

Driveways located on collector streets shall be standard commercial driveways per the Standard Drawings unless the Town Engineer deems a commercial frontage (*STD DWG H-4*) driveway appropriate for a particular project. Driveways on arterial streets shall be *STD DWG H-4* per the Standard Drawings.

For driveways on arterial streets where both left turns out and right turns out will be permitted as well as ingress, the driveway throat shall be 40 feet wide and shall be striped to provide one 16 foot wide egress lane, one 11 foot wide left out lane (and throughs if applicable), and one 13 foot wide right out lane. Said striping and lane widths shall be continued into the site at least as far as the calculated MRTD per Section 5-2 of these standards.

Driveway slopes shall have a maximum grade of 10 percent except between the edge of pavement and a distance 15 feet within the project. This area shall have a maximum slope of 2 percent. Unusual terrain conditions may warrant waiver of this requirement subject to the approval of the Town Engineer.

- B. **Location** - All aspects of site access (location of driveways, number of driveways allowed, spacing of driveways, etc.) are addressed in Section 6 of this manual.

## SECTION 8

### TRAFFIC SIGNALS

8-1 **TRAFFIC SIGNAL NEEDS ASSESSMENT** - The need for new traffic signals shall be based on warrants contained in the latest edition of the State Traffic Manual. For a more detailed description of a traffic signal needs assessment, refer to Section 5-2I of this manual.

8-2 **DESIGN STANDARDS** - Traffic signals shall be designed in accordance with this manual and the latest editions of the following:

- \* Town of Loomis Construction Improvement Standards.
- \* State Standard Specifications and State Standard Plans, including all standard symbols contained therein.
- \* Manual on Uniform Traffic Control Devices.
- \* State Traffic Manual, Chapter 9. Attention is directed to the following:
  1. Table 9-1 for advanced loop detector setbacks.
  2. Section 9-10.3 for luminaire illumination requirements (minimum .15 footcandles for crosswalks, minimum .6 footcandles for middle of intersection).
  3. Tables 9-8 and 9-9 for conduit sizing. The 26% fill limit shall apply.

A. **Signal Standard Types** - Traffic signal standards, posts, and mast arms shall be of the types listed in Table 8-1:

TABLE 8-1

STANDARD/POST	MAST ARM	LUMINAIRE ARM
Ped. Push Button	none	none
7 foot 1-B	none	none
10 foot 1-B	none	none
Type 15	none	6-15 foot
16-2-70	20 foot	none
17-3-70	20 foot	6-15 foot
18-4-70	25-30 foot	none
19-4-70	25-30 foot	6-15 foot
23-4-70	35 foot	none
24-4-70	35 foot	6-15 foot
26-4-70	40-45 foot	6-15 foot
27-4-70	40-45 foot	none
28-5-70	50-55 foot	none
29-5-70	50-55 foot	6-15 foot

The typical luminaire arm length used is 15 feet.

Decorative poles shall be reviewed and approved by the Town Engineer.

- B. **Vehicle and Pedestrian Signal Types** - Vehicle signals and pedestrian signals shall be of the following types:

MAT (3 section only)  
MAS  
SV-1-T  
SV-2-TA  
SV-3-TA  
TV-1-T  
TV-2-T  
TV-3-T  
SP-1-CS  
SP-2-CS  
TP-1  
TP-2-T

The MAT mounting shall only be used for 3 section vehicle signals for protected left turn movements. All other mast arm mounted vehicle signals shall be MAS mounted.

All left turn lanes shall be provided with a protected left turn phase.

Protected left turn signals shall be all arrow.

Programmed visibility vehicle signals shall not be used without prior approval of the Town Engineer.

- C. **Vehicle Signal Alignment** - The following signal head alignments are typical. Variations may be required on a case by case basis.

1. For single left turn lanes, the left turn signal shall line up with the center of the left turn lane as close as possible.
2. For dual left turn lanes, the left turn signal shall line up with the line between the two left turn lanes as close as possible.
3. When a protected left turn signal is used, the signal for the through movement shall line up with the center of the lane group as close as possible, regardless of the number of through lanes. When 50 or 55' mast arms are used, only one MAS signal shall be used for the through movement instead of two signals as shown in the State Standard Plans.
4. For one through lane with permissive left turn (no left turn lane), the MAS signal shall line up with the center of the left half (upon approach) of the through lane, as close as possible.
5. For two through lanes with permissive left turn (no left turn lane), the MAS signal shall line up with the center of the #1 through lane as close as possible.
6. When a 4 section MAS signal is used, it shall line up with the center of the left half (upon approach) of the #1 through lane, as close as possible.

**D. Number of Vehicle Signal Indications** - Typical indications are as follows:

1. For protected left turn movements: one 3-section all arrow MAT and one 3-section all arrow far left side pole-mounted signal.
2. For through movements (with protected left turns): one 3-section MAS, one 3-section far right side pole-mounted signal, and one 3-section near right side pole-mounted signal.
3. For through movements (with permissive left turns): one 3-section MAS, one 3-section far left side pole-mounted signal, one 3-section far right side pole-mounted signal, and one 3-section near right side pole-mounted signal.
4. For split phased situations: one 4-section MAS (w/GA), one 4-section far left side pole-mounted signal (w/GA), one 3-section far right side pole-mounted signal, and one 3-section near right side pole-mounted signal.
5. For right turn arrow overlap situations: same as above except the far right side and near right side pole-mounted signals shall be 5-section with green and yellow arrows. Right turn arrow overlaps shall not be provided without prior approval of the Town Engineer.

**E. Vehicle Detector Layout and Inputs** - Typical vehicle detector layout and inputs shall be as follows:

1. For permissive left turn situations, the left most through lane shall have four loops spaced 10 feet apart. The loop farthest from the stop bar shall have counting ability. The other three loops can share one input.
2. For protected left turn situations, each left turn lane shall have three loops spaced 10 feet apart and one intermediate loop with counting ability placed the same distance from the stop bar as the intermediate loops for the through lanes.
3. Each through lane shall have two call loops spaced 10 feet apart, one intermediate loop with counting ability placed 40% of the distance from the stop bar to the advanced loop, and one advanced loop placed per State Traffic Manual Table 9-1.
4. Each right turn only lane shall have two loops spaced 10 feet apart. The loop farthest from the stop bar shall have counting ability. Detection in the right turn only lane shall have a 20 second delay.
5. For the geometric minor leg of a "tee" intersection where approaching vehicles must turn left or right, each left turn lane shall have four loops spaced 10 feet apart. The loop farthest from the stop bar shall have counting ability. The other three loops can share one input. No intermediate or advanced loops will be required.

The loop nearest the stop bar shall be Type Q and shall be placed 1 foot from the stop bar. Where a loop is designated to have counting ability as discussed above, the loop shall not share an input with any other loop.

Detector handholes shall be provided. Handholes shall be placed so they line up with roadway stripes to minimize the frequency of vehicle tires driving over the handhole covers.

**F. Protected vs. Permissive Left Turn Phasing** - Protected left turn phasing should be provided under the following conditions:

1. If any of the guidelines for protected left turn phases are met (or are expected to be met as a result of a development project) as outlined in Section 9-01.3 of the State Traffic Manual (e.g., accidents, delay, volume, and misc.).
2. Where the travel distance through the intersection for left turn vehicles is more than 100 feet and the 85th percentile speed of opposing traffic is 45 mph or more.
3. Where there are two or more opposing through lanes.
4. Where the left turn queue recurrently occupies the #1 through lane, and where dual left turn lanes cannot be provided, and where the left turn lane cannot be extended.
5. Where dual left turns are provided.

Protected/Permissive phasing, as discussed in Section 9-03.8 of the Traffic Manual, is not used in Loomis.

**G. Traffic Signal Interconnect** - Traffic signal interconnect shall be provided for new signal installations, and for modification of existing signals which currently do not have interconnect. The interconnect cable shall not share conduit with service conductors, but may share conduit with signal conductors and lead-in cable.

The interconnect shall connect the subject signal with at least one existing traffic signal. If the subject signal is between two existing signals, the interconnect shall connect all three signals.

In cases where interconnect conduit is or will be provided, but for some reason interconnect cable is not being provided, the interconnect conduit shall be provided with a green #14 AWG pull wire.

**H. Traffic Signs for Signals** - Pertinent traffic signs shall be specified with the signal design. Typical signs include mast arm mounted street name signs, R-73 mast arm mounted signs, R34-2 mast arm mounted signs, R-49 signs (where crossing the street is permitted at only one location via crosswalk), R-96 signs (where crossing the street is completely prohibited), W41 roadside signs (and pavement markings) where visibility of the signal is limited or where the signal may be unexpected by motorists, and R61 roadside signs on the geometric minor leg approach of a "tee" intersection.

All mast arm mounted or signal standard mounted G-7 signs shall have a white border per Caltrans Standard Specifications.

In the case of R73 mast arm mounted signs, a common question is whether or not to allow u-turns. This determination is a function of whether or not there is sufficient room for turning radius. The guideline the Town uses to allow u-turns is there needs to be at least 36 feet between the left side of the vehicle in the left turn lane and the curb to the far left of said vehicle.

**8-3 PREPARATION OF PLANS** - Traffic signal plan sheets shall conform to the provisions of Sections 2 and 3 of this manual, including submittal requirements, Autocad files, etc. Traffic signal plans shall have a title sheet followed by a signal and lighting sheet for each intersection. Signing, striping, and interconnect information may be included on the signal and lighting sheet, or may be included on

separate sheets, depending on ease of readability.

**A. Title Sheet** - The title sheet shall include the following:

1. Title of project, which shall include the location.
2. A vicinity map with north arrow. The location map is not required to be to scale.
3. Pertinent signature blocks, and revision block.
4. A legend for symbols not found in the Standard Plans (e.g., utility lines, etc.). Below the legend, place the following note: NOTE: SEE STATE STANDARD PLANS ES-1A AND ES-1B FOR EXPLANATION OF OTHER SYMBOLS.
5. A service equipment schedule and wiring diagram with legend.

The following General Notes:

1. All work shall conform to the Town of Loomis Improvement Standards and State Standard Specifications.
2. No lane closures are permitted between 3:30 pm and 9:00 am. Traffic control shall be per State Manual of Traffic Controls for Construction and Maintenance Work Zones.
3. The Contractor shall be responsible for verification of all existing underground utilities, whether or not they are shown on these plans. The contractor shall contact U.S.A. and have utilities marked at least 48 hours before beginning work. Where markings are near proposed foundations, the contractor shall locate underground utilities by pot holing prior to excavating.
4. Locations of signal standards, controller, and service pedestal as shown on these plans are approximate. Actual location shall be determined by the Consulting Engineer in the field, with approval of the Town Engineer.
5. The contractor shall provide and install all equipment and materials necessary for the signal to operate as shown in the phase diagram.

**B. Signal and Lighting Sheet** - The signal and lighting sheet shall be drawn at a scale of 1 inch equals 20 feet, and shall include the following:

1. A north arrow.
2. Existing and proposed field conditions which include, but are not limited to, the following: underground and overhead utilities, driveways, fire hydrants, poles, signs, fences, street lights, edge of pavement, curb and gutter, sidewalk, right-of-way line, P.U.E.'s, roadway striping, medians, centerline, pull boxes, wheelchair ramps, trees (particularly those needing trimming), adjacent topography, etc. Existing field conditions, appurtenances, etc, shall be dashed and screened. Proposed shall be solid and bold.
3. Pole and equipment schedule.
4. Conductor and conduit schedule. The schedule shall include rows showing

"percent fill" values, and conduit quantity/size.

5. Complete traffic signal design, including but not limited to, the following: conduit runs, detector loops (with input designations), detector handholes, vehicle and pedestrian signals (with phase designation), luminaires, pedestrian pushbuttons (with phase designation), controller, service pedestal, service point, emergency vehicle detectors, signing, striping, and interconnect.
6. Phasing diagram. Designate type of flashing operation below the phasing diagram.
7. Phasing for emergency vehicle preemption. Typically, protected left turn phases are combined with the concurrent through movement during EV preemption.

## SECTION 9

# DOMESTIC WATER SUPPLY SYSTEM DESIGN

Water design shall follow Placer County Water Agency Design Standards.



## SECTION 10

# SANITARY SEWER DESIGN

Sewer design shall follow the South Placer Municipal Utility District Design Standards.



## SECTION 11

### DRAINAGE

11-1 **GENERAL** - This section is formulated to clearly define acceptable drainage analysis and design criteria for development in the Town of Loomis. Drainage facets not covered in this section shall conform to the Placer County Flood Control and Water Conservation District "Stormwater Management Manual", latest edition, and good engineering practice.

11-2 **TOWN POLICY AND REQUIREMENTS** - There shall be no building or grading within the 100 year floodplain. All new residential lots adjacent to the 100 year floodplain shall have minimum pad elevations of 2 feet above the 100 year water surface elevation and all new commercial sites adjacent to the 100 year floodplain shall have their finished floor elevation a minimum of 2 feet above the 100 year water surface elevation assuming failure of the drainage system. This requires the Consulting Engineer to provide an overland release for all projects or provide storage for the 100 year event.

The overland release path shall be constructed in a manner to transport the peak rate of runoff from the 100 year frequency storm through the site assuming all storm drains are inoperative, all upstream areas are fully developed, and that antecedent rainfall has saturated the tributary watershed. Streets, parking lots, playgrounds, pedestrian areas, pedestrian walkways, utility easements, and other open space areas may be considered compatible uses within the overland release path.

Residential lots developed adjacent to a designated flood plain shall have pad elevations a minimum of two feet above the Town's 100 year flood plain. Non-residential projects shall have finished floor elevations a minimum of two feet above the Town's 100 year flood plain. Elevation Certificates are required for all such lots. In the case of no-grade or contour grade lots, pad elevations as described above do not apply as these lots will not be padded out. In such cases, a Minimum Finished Floor Elevation Guarantee letter shall be submitted to the Town Engineer prior to plan approval for those lots which may become inundated. Said floor elevations shall meet the minimum requirements for pad elevations as described above.

Municipal Code prohibits development within 100 year flood plain. If a variance is requested (P272 Municipal Code 2' above 100 year overland release), a hydraulic study shall be required to determine the effect of the encroachment on the floodplain. The developer should contact the Town Engineer to ascertain what existing studies, if available should be used as a base model for the proposed development. The developer's engineer is responsible for assembling the necessary data and presenting the completed study to the Town for review and evaluation. The study should reflect ultimate conditions of the watershed. See Section 2 for submittal requirements.

Except for single family or duplex residential lots, site drainage shall be collected on-site and conveyed via an underground storm drain system to an approved storm drainage system without flowing into existing street gutters or existing roadside ditches. In the event an oil/grit separator for the storm drain system is required as a mitigation measure in an environmental document appurtenant to the project, the separator shall be located on-site and the maintenance of the separator shall be the landowner's responsibility.

11-3 **FEDERAL FLOOD PROGRAM** - The Town of Loomis is a participant on the National Flood Insurance Program and all development in the Town shall comply with the regulations of the Town of Loomis Flood Damage Prevention Ordinance and the Federal Emergency Management Agency (FEMA).

TABLE 11-1  
ALLOWABLE STREET ENCROACHMENTS

TYPE	PROFILE	10 YEAR STORM	25 YEAR STORM	100 YEAR STORM
LOCAL	Continuous grade, uphill and downhill.	Traveled way is open to travel and does not carry storm water.	Storm water elevation does not exceed top back of sidewalk. Maximum depth in traveled way – 6".	Maximum storm water elevation is 4" above the top back of curb.
	Sag Points	Storm water elevation does not exceed top back of curb or sidewalk.	Storm water elevation does not exceed 4" above the top back of curb. Maximum depth in traveled way – 6".	Storm water is a minimum of one foot below building pads. Ponding does not exceed more than 120' from inlet along any street segment or more than 6" above centerline.
COLLECTOR	Continuous grade, uphill and downhill	Traveled way is open to travel and does not carry storm water.	Storm water elevation does not exceed top back of sidewalk. Maximum depth in traveled way – 6".	Storm water flow is contained within the right of way. The center 12 feet of roadway shall remain clear of storm water.
	Sag Points	Storm water elevation does not exceed top back of curb or sidewalk. Traveled way shall be dry.	Storm water elevation does not exceed 4" above the top back of curb. Maximum depth in traveled way – 6".	Storm water flow is contained within the right of way. The center 12' of roadway shall remain clear of storm water. Maximum depth over sidewalk or curb – 6".
ARTERIAL & EXPRESSWAY	Continuous grade, uphill and downhill.	All travel lanes clear of storm water. Storm water does not exceed top back of curb or sidewalk.		Center travel lanes are clear of storm water flow. Storm flow contained within the right of way. Maximum depth over sidewalk – 6".

Amendments of the FEMA flood maps will be required of all new developments located in a FEMA flood zone. Petitions for a Letter of Map Amendment, including any fee required by FEMA, shall be submitted to the Public Works Department prior to approval of improvement or site plans.

- 11-4 **DRAINAGE DIVERSIONS** - The diversion of natural drainage is allowable only within the limits of the proposed improvement. All drainage must enter and leave the improved area at its original horizontal and vertical condition unless an agreement, approved by the Town Attorney, has been executed with the adjoining property owners. Temporary drainage diversions during construction shall be approved by the Town Engineer and shall be located and constructed in such a fashion as to permit their removal when necessary for the prevention of damage to adjoining properties.

- 11-5 **STORM DRAIN LOCATION AND ALIGNMENT REQUIREMENTS** - Location and alignment criteria are as follows:

- A. **General** - All storm drains shall be placed in rights-of-way dedicated for public streets unless the use of easements is specifically approved by the Town Engineer. On crossing, water lines shall be at least 12 inches above the storm drain line.
- B. **Location in New Subdivision** - In new subdivisions, storm drains shall be located five feet north or west of street centerlines within minor and primary residential streets, unless approved otherwise by the Town Engineer.
- C. **Location in Existing Streets** - When storm drains are to be installed in an existing street, factors such as curbs, gutters, sidewalks, traffic conditions, traffic lane conditions, pavement conditions, future street improvement plans, and existing utilities shall all be considered. The approval of the Town Engineer shall be obtained in every instance.
- D. **Location in Unpaved Areas** - All manholes shall be accessible for maintenance vehicles by way of a paved access road at least 12 feet wide. A flat area 10 feet in diameter shall also be paved around each manhole. Any access road longer than 250 feet or with turns shall have a paved turnaround.
- E. **Easements** - If it is necessary to install a storm drain outside of the public right of way, or within a narrow right of way, an easement dedication to the Town shall be required. Temporary working easements of adequate dimensions shall be provided to allow the construction within the permanent easement to be completed in a safe and reasonable manner. Easements shall be totally on one side of the property line or fence. Easements for drain lines shall meet all of the following width criteria:
  - 1. Minimum width of easement shall be 15 feet for all permanent easements and a minimum width of 25 feet for all construction easement (temporary).
  - 2. All easements shall have a minimum width equal to the required trench width according to the standard detail for trench backfill plus two additional feet of width for every foot of depth of the pipe as measured from the bottom of the pipe to finished grade. All drain lines shall be centered within their easement. Final easement width shall be approved by the Town Engineer.
  - 3. Drainage easements for open channels shall have a sufficient width to contain the channel, fencing where required, and a 12-foot wide service road. A service road may not be required where the channel bottom is lined and a suitable access ramp is provided.
  - 4. Where minor improvement of a channel falls on adjacent property (such as day

lighting a ditch profile) a notarized right-of-entry from the adjacent property owner(s) for such construction shall be required. A copy of the document which grants such approval shall be submitted to the Town Engineer prior to the approval of the improvement plans.

5. Easement shall be acquired prior to the start of construction.

- 11-6 **DRAINAGE CAPACITY/DESIGN** - All drainage systems shall be designed to accommodate the ultimate development of the entire upstream watershed. The ten year frequency storm shall be used in the design of the underground drainage system. In addition, the allowable street encroachments specified in Table 11-1 shall be maintained unless a different criteria is permitted by the Town Engineer.

The Consulting Engineer shall design a grading plan which ensures that storm waters flow through a development in a manner that will not flood structures in the event of failure or overloading of the drainage system. All projects shall provide an overland release assuming a non-functioning storm drain system during a 100-year event, and all building pad or floors shall have at least two feet of freeboard.

- 11-7 **DESIGN RUNOFF** - The determination of runoff quantities and methods used shall be as specified in the most recent edition of the Placer County Flood Control and Water Conservation District's "Stormwater Management Manual". This method is based on a relationship between the characteristic watershed response time and peak flow per unit area from precipitation patterns typical for the region and provides a rapid evaluation of the peak flow rate from small watersheds (less than 200 acres). For watersheds larger than 200 acres, a HEC-1 analysis shall be provided conforming to the requirements of the most recent edition of the Placer County Flood Control and Water Conservation District "Stormwater Management Manual".

- A. **Criteria** - Peak flow is a product of watershed area and peak discharge per unit area which, in turn, is a function of a computed response time.

$$Q_p = qA \quad \text{[Equation 11-1]}$$

Where:

$$\begin{aligned} Q_p &= \text{peak discharge (cfs)} \\ q &= \text{unit peak discharge (cfs/acre)} \\ A &= \text{area (acres)} \end{aligned}$$

- B. **Response Time** - Response time ( $t_r$ ) is an indication of the response time of the watershed to intense precipitation. It is determined as the sum of separate response times for a path consisting of the initial, overland sheet flow and succeeding collector flows from the most hydraulically remote location in the watershed to the watershed outlet.

1. **Overland Flow** - Overland flow includes flow over planar surfaces such as roofs, streets, lawns, parking lots and fields. The overland flow length is not always well defined in natural areas, but usually becomes concentrated in shallow rivulets or swales within no more than 300 feet. In areas with development, the point at which the overland flow is concentrated in a collector, such as a gutter or pipe, is usually identifiable. Acceptable overland flow response times for various land uses are as follows. These times should be reduced to  $0.90 * t_o$  in 25 year events and  $0.70$  in 100 year events.

LAND USE	OVERLAND RESPONSE TIME
Single-Family Residential	15 minutes maximum
Multiple Family w/ Landscaping	10 minutes maximum
Commercial	10 minutes maximum

Equation 11-2 is used to estimate the overland flow component of response time.

$$t_{ro} = \frac{.355(nL)^{0.6}}{s^{0.3}} \quad [\text{Equation 11-2}]$$

Where:

$t_{ro}$  = overland response time (minutes)  
 $n$  = Manning's roughness coefficient (Table 11-2)  
 $L$  = flow length (feet)  
 $s$  = slope of surface (feet/feet)

TABLE 11-2

SURFACE	n
Smooth surfaces (concrete, asphalt, or bare soil)	0.11
Grass:	
Short Grass Prairie	0.15
Dense Grasses	0.24
Bermuda Grass	0.40
Poor grass cover on moderately rough surface	0.40
Woods with underbrush	0.40 - 0.80

2. Collector Flow - Manning's equation shall be used for estimating collector response time ( $t_{rc}$ ). The velocity computed for open channel flows using Manning's equation shall be increased by an adjustment factor as follows to account for celerity:

CHANNEL SECTION	CELERITY FACTOR
Triangular	1.33
Wide Rectangular	1.67

In natural watersheds, it may be appropriate to use higher values of Manning's  $n$  for the initial collector where the flow is shallow.

- C. **Unit Peak Discharge** - Unit peak discharge is computed from the response time,  $t_r$ , and equation 11-3 as follows:

$$q = c_0 t_r^{c_1} \quad [\text{Equation 11-3}]$$

Where:

$q$  = peak unit discharge (cfs/acre)

$t_r = t_{ro} + t_{rc} = \text{response time (minutes)}$   
 $C_0, C_1 = \text{coefficient from Table 11-3}$

**TABLE 11-3**  
**COEFFICIENT FOR UNIT PEAK DISCHARGE**

RETURN PERIOD (yrs)	$t_r < 20$ minutes		$t_r > 20$ minutes	
	$C_0$	$C_1$	$C_0$	$C_1$
10	5.80	-0.50	17.80	-0.87
25	7.54	-0.50	23.14	-0.87
100	9.28	-0.50	28.48	-0.87

- D. **Infiltration Factor** - The effect of infiltration is reflected in the infiltration factor  $F_i$ .  $F_i$  is found from the infiltration rate and Equation 11-4 as follows:

$$F_i = 1.7I \quad [\text{Equation 11-4}]$$

Where:

$F_i$  = infiltration factor (cfs/acre)

$I$  = infiltration rate (inches/hour, Table 11-4)

**TABLE 11-4**  
**INFILTRATION RATES FOR URBAN COVERS**

COVER TYPE	QUALITY OF COVER	SOIL GROUP			
		A	B	C	D
Residential or Commercial Landscaping	Good	.48	.25	.16	.12
Open Space	Poor	.26	.09	.06	.04
	Fair	.31	.16	.09	.07
	Good	.41	.22	.12	.09
Streets and Roads: Paved with open ditches Gravel Dirt	Poor	.07	.06	.03	.02
	Fair	.11	.06	.04	.03
	Good	.14	.08	.05	.04

Most soils within the Town of Loomis are of Soil Group D. If the Consulting Engineer feels that the soil group in the area of development is of a different group, he must supply additional information to substantiate his assumption.

1. **Soil Groups** - The Soil Conservation Service (SCS) classifies soil into four hydrologic soils groups. Soils maps and soil surveys of the Town are available for inspection at the Placer County Resource Conservation District and the Flood Control District.

**Group A** - Low runoff potential. Soils having high infiltration rates even when thoroughly wetted and consisting chiefly of deep, well to excessively drained sands or gravels. These soils have a high rate of water transmission.

**Group B** - Soils having moderate infiltration rates when thoroughly wetted and consisting chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.

**Group C** - Soils having slow infiltration rates when thoroughly wetted and consisting chiefly of soils with a layer that impedes downward movement of water, or soils with moderately fine to fine texture. These soils have a slow rate of water transmission.

**Group D** - High runoff potential. Soils having very slow infiltration rates when thoroughly wetted and consisting chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very slow rate of water transmission.

- E. **Connecting Separately Connected Areas** - When both pervious and connected, impervious overland flow areas are present, the estimate of combined flow is computed as a weighted adjustment to the peak unit runoff as follows in Equation 11-5:

$$Q_p = qA - A_p F_i \quad [\text{Equation 11-5}]$$

Where:

- $Q_p$  = peak flow (cfs)
- $A$  = total watershed area (acres)
- $q$  = unit peak runoff (cfs/acre)
- $F_i$  = infiltration factor (cfs/acre)
- $A_p$  = pervious area (acres)

- F. **Procedure** - The following procedures shall be used in determination of design runoff.

1. Determine the typical pervious and connected impervious flow paths with the longest response time.
2. Determine the total response time for the shed being analyzed combining the overland flow elements and their common collector.
3. Determine unit peak discharge for the shed area using Equation 11-3.
4. Determine the pervious infiltration factor using equation 11-4.
5. Compute the total peak flow using equation 11-5.

- 11-8 **EXAMPLE USING PLACER COUNTY STORM DRAINAGE METHOD** - For this example, the following assumptions were made:

- A. Lots have constant slope of one percent.
- B. Lots have bermuda grass ground cover.
- C. Average elevation of subdivision is 200 feet.
- D. Class D soils
- E. Area = 65% impervious, 35% pervious.

**Step 1** Determine overland response time  $t_{ro}$  as follows:

Overland flow length = 160'  
Bermuda grass cover,  $n = 0.24$   
Slope = 1%

Equation 11-2 gives:

$$t_{ro} = 12.6 \text{ minutes}$$

**Step 2** Determine collector flow,  $t_{rc}$ , as follows:

Collector flow to inlet is assumed to be gutter flow. Gutter flow velocity = 2.0 fps.

$$t_{rc} = 420 \text{ ft} / 2 \text{ fps} = 3.5 \text{ minutes.}$$

**Step 3** Response time  $t_r = t_{ro} + t_{rc} = 16.1 \text{ minutes}$

Determine the unit peak discharge for ten year storm from equation 11-3:

$$\begin{aligned} t_r &= 16.1 \text{ minutes} \\ C_0 &= 5.8 \\ C_1 &= -0.50 \\ q &= 1.45 \text{ cfs/acre} \end{aligned}$$

**Step 4** Determine infiltration factor:

Elevation = 200 feet  
Class D soils, residential landscaping with good cover, Infiltration factor = .12 (Table 11-5)

From equation 11-4,  $F_i = .21$

**Step 5** Compute total peak flow:

$$\begin{aligned} \text{Pervious area} &= (0.35)(1.4) = .49 \text{ acres} \\ Q_p &= 1.4(1.45) - .49(.21) = 1.93 \text{ cfs} \end{aligned}$$

This establishes flow into the drainage system. From this point, the time within the conduit is added to both the impervious and pervious response times and conduits are sized appropriately.

**11-9** **HYDRAULICS** - All storm drain pipelines and open channels shall be designed to convey the design runoff calculated per Section 11-7 and shall conform to the following requirements:

- A. Hydraulic Grade Line** - For the 10 year frequency storm, the hydraulic grade line shall be a minimum of one foot below all inlet grates and manhole covers of all structure of the upstream system. The hydraulic grade line shall be shown on the plans when it is above the top of the pipe.
- B. Manning's Formula** - The "n" value used in Manning's formula shall conform to the following:
  - 1. Manning's formula shall be used to compute capacities of all open and closed conduits other than culverts.

2. A minimum "n" value of 0.015 shall be used for sizing conduits.
3. Minimum velocity in closed conduits shall be 2 feet per second. Maximum velocity shall be 12 feet per second. Velocities shall be based on full flow conditions.

**11-10 CLOSED CONDUITS** - The specific type of pipe or alternate pipe to be used in any development shall be shown on the plans. If the developer proposes to use any type of pipe not shown on the approved plans, the plans shall be resubmitted to the Town Engineer for approval.

**A. Size and Material** - Drainage systems to be maintained by the Town of Loomis shall be constructed of the following materials for the specific purposes specified:

1. Precast Reinforced Concrete Pipe (RCP) - will be allowed in all cases. Class of pipe shall be based upon depth as detailed in the Standard Drawings. Class 4 RCP shall be used unless indicated otherwise on the plans.
2. Cast-in-Place Concrete Pipe - will be allowed in all cases.
3. Corrugated Steel Pipe - Culverts 60 inches in diameter and larger and located outside of the traveled way may be corrugated steel pipe, subject to approval of the Town Engineer. Aluminum pipe is not allowed. When steel pipe is to be constructed, it shall be designed for a service life of 100 years in accordance with the methods specified in Section 7-851.3 of the California Department of Transportation Highway Design Manual. The Consulting Engineer shall provide certified copies of the laboratory report giving the results of pH and resistivity tests. The report shall also include a map showing the location of each site where samples are taken.

Unless otherwise specified by the Town Engineer, a minimum of two soil samples shall be taken for the first 100 lineal feet of pipe or fraction thereof on a project with a minimum of one additional sample being required for each additional 1000 feet of pipe or fraction thereof. The samples shall be taken along the approximate alignment and at the approximate depth of the pipe to be installed.

4. Acrylonitrile-Butadiene-Styrene (ABS) - For pipe 15" in diameter and smaller, ABS pipe, conforming to and meeting the requirements of ASTM Designation D2680, may be used. The Town Engineer may require certification by the manufacturer that the test results comply with the specification requirements.
5. Polyvinyl Chloride Pipe - may be used conforming to one of the following specifications:

DIAMETER	ASTM DESIGNATION
10 inches thru 15 inches	D 3034 , SDR 35
18 inches thru 27 inches	F794 , F2241 , SDR 51
30 inches thru 48 inches	F794

6. High Density Polyethylene Pipe (HDPE) - May be used with written permission by the Town Engineer.

The minimum allowable pipe diameter for any storm drain in the public right of way shall be 12 inches. Onsite (private) drainage systems may use a minimum size of 8 inches.

- B. **Cover Requirements** - All cover requirements are as shown in the Standard Drawings or per the manufacturer's specifications. At locations where the standard minimum cover requirements cannot be obtained, the conduit shall be either encased in concrete or provided with a concrete cover or another method as approved by the Town Engineer.

In fill areas, or in areas with poor soil conditions where it is anticipated that a good, firm, vertical-walled trench cannot be constructed the Consulting Engineer shall design the pipe structural requirements in accordance with good engineering practice. If trench conditions are uncertain, a note shall be placed on the plans making it the contractor's responsibility to place the proper strength pipe if poor trench conditions are encountered.

- C. **Alignment** - Pipelines for storm drainage shall have a constant slope between manholes, junction boxes, and or catch basins. Minimum radius of curvature shall be 200 feet. In no case shall the radius of curvature be less than the manufacturer's recommendations for the particular pipe size under consideration.

Drainage pipelines shall be located in the street whenever possible. The location of storm drainage pipelines in new streets shall be 5 feet north or west of and parallel with the street centerline of the street. Meandering and unnecessary angular changes of pipeline shall be avoided. Angular changes in alignment shall not be less than 90 degrees with the downstream section of the storm drain main. All laterals intersecting with the mainline shall have an alignment that provides an intersection with the downstream section of the storm drain main of no less than 90 degrees.

When storm drainage lines are to be placed in existing streets, factors such as curbs, gutters, sidewalks, traffic conditions, pavement conditions, future street improvement plans, and existing utilities shall be considered.

Open ditches, lined channels, swales, and flood plain areas shall be maintained as nearly as possible in their existing alignment. When an open ditch is to be constructed parallel to an existing roadway, the ditch shall be constructed outside the proposed right of way of the ultimate street development.

- 11-11 **MANHOLES** - Standard precast concrete manholes shall be constructed as required. Where special manholes or junction boxes are required, the design must be approved by the Town Engineer.

- A. **Saddle Manholes** - Saddle manholes may be constructed on storm drain conduit 36 inches or greater in diameter provided that no junction exists with any other storm drain conduit.
- B. **Covers** - All manholes and junction boxes, other than inlets, shall have covers per the Standard Drawings. Slotted manhole covers may be used to pick up minor drainage in non-traffic areas.
- C. **Size** - Manholes shall be sized so that at least 6 inches of undisturbed manhole wall will exist between entering pipes. No pipe will be allowed to enter a manhole in the transition portion of the manhole cone. Manholes will not be allowed in gutters except where approved by the Town Engineer. In no case will junction boxes or manholes be allowed which are smaller than 48 inches inside diameter.
- D. **Location** - Manholes shall be located at junction points, changes in gradient and changes in conduit size. Manholes or junction boxes will not be required for a reach of pipe (18 inch

diameter or less ) not greater than 80 feet in length that is to be connected to a 36 inch or larger diameter pipe, subject to approval of the Town Engineer. The spacing of manholes shall not exceed 500 feet. The spacing of manholes shall be nearly equal whenever possible.

- 11-12 INLETS** - Drop inlets in streets shall be located at lot lines in residential subdivisions except at intersections, where they shall be placed at curb returns. Inlets shall be placed such that the length of flow in the gutter does not exceed 500 feet unless approved by Town Engineer. The depth of flow in the gutter at the inlet shall not exceed 0.35 feet based on inlet capacity in a ten year storm and shall not encroach into the traveled ways as specified in Table 11-1 for other design storms. The runoff volume shall include any flow that by-passes upstream grates.

All inlets located within the Town right of way or easements shall be Type "B" unless indicated otherwise on the plans. Inlets may be modified for use without curb sections for on-site drainage. Where an inlet is proposed in public streets and sidewalk is not constructed adjacent to the back of curb, a concrete collar shall be placed behind the inlet. Type C inlets may be used as junction inlets if the flow line is 4 feet or less below the grate elevation. A one-foot sump shall be constructed in a drop inlet discharging to an open space or waterway.

Drop inlets draining public streets may be connected directly to a trunk line 36-inches in diameter or larger by means of a lateral not exceeding 18-inches in diameter and 80 feet in length.

- 11-13 JUNCTION BOXES** - The requirements for junction boxes are as follows:

- A. Junction boxes shall be constructed of reinforced concrete or fabricated from reinforced concrete pipe section where size limitations permit. Structural calculations shall be provided for all junction boxes.
- B. Minimum wall thickness for reinforced concrete junction boxes shall be 6 inches.
- C. The inside dimension of junction boxes shall be such as to provide a minimum of three inches clearance on the outside diameter of the largest pipe in each face. All junction boxes shall be rectangular in shape unless otherwise approved by the Town Engineer. Junction boxes deeper than 4 feet shall have a minimum dimension of 48 inches.

- 11-14 INLET AND OUTLET STRUCTURES** - The requirement for these facilities are as follows:

- A. **Headwalls, Wingwalls, and Endwalls** - All headwalls, wingwalls, endwalls, preformed end sections, guard rails and bank protection shall be considered individually and shall be, in general, designed in accordance with the Standard Specifications and Standard Plans of the California Department of Transportation.

Metal beam guard rails or chain link fencing may be required by the Town Engineer at culverts, headwalls, box culverts, and on steep side slopes.

- B. **Trash Racks and Access Control Racks** - Trash racks will be provided where they are necessary to prevent clogging of culverts, storm drains, and to eliminate hazards.

Access control racks shall be required on all pipes 24 inches or larger in diameter.

- 11-15 DRAINAGE PUMPS** - Drainage pumps shall be avoided whenever possible, and used only with specific approval of the Town Engineer. If the use of drainage pumps is permitted, the drainage system shall be designed so as to provide for gravity outfall during the summer months and other periods of low water stages. If a low stage gravity outfall is impossible or impractical, an alternate

pump of smaller capacity for low stage flow may be used provided specific approval is granted by the Town Engineer.

- A. **Design Requirements** - Pumping installations shall be designed to accommodate a design storm as specified by the Town Engineer. When a station contains a gravity discharge, pumping capacity must be equal to the design inflow. When the station does not have a gravity discharge, pumping units must be designed to furnish 100 percent capacity with any one pump out. Any deviation from this criteria must receive the specific approval of the Town Engineer.

Pumping stations shall be designed so that gravity flow does not pass through the pump pit. No motor overload condition shall exist at any sump or flow condition. This does not preclude high sump design if low sump condition does not create an overload.

Each pumping stations shall receive separate approval for the electrical system, piping system, housing installation and other miscellaneous design features. The electrical system for drainage pumps shall conform to the electrical code and the State Department of Transportation Standards.

- B. **Maintenance Requirements** - Adequate access shall be provided for cleaning the pump sump. Trash racks shall be provided upstream from the pumping plant. Provisions shall be made for easy cleaning of the trash racks. Hatch covers, where used, shall be of raised pattern aluminum floor plate, or other approved lightweight cover. Dissimilar metals shall be insulated from each other when necessary. Ladder rungs, where used, shall be of a non-slip variety. All drainage pumping plant sites shall be fenced with 6 foot chain link fence with barbed wire extension arms.

**11-16 CHANNELS AND OUTFALL DESIGN** - Drainage shall be conveyed in an open channel if the volume of flow exceeds 200 cfs in a 10-year event or if the drainage area exceeds 300 acres. Residential lots adjacent to open channels shall have minimum pad elevations of 2.5-feet above the 100-year water surface elevation. Non-residential lots shall have their finished floor elevation 2.5-feet above the 100-year water surface elevation.

- A. **Design Requirements** - Channels shall be constructed to a typical cross section. Fully lined channels shall be designed with maximum side slopes of 1:1. Channels with unlined sides shall be designed with maximum side slopes of 2:1 or as specified by the Geotechnical Engineer based on existing soil conditions. Lined channels shall have a minimum bottom width of 6 feet. Channel lining shall be either finished concrete, sacked concrete, or doweled and sacked concrete. The minimum weight of sacked concrete shall be 60 pounds per bag. Natural channels shall be designed with a minimum n value of 0.055.

All open channels shall be designed to carry the 100 year frequency design storm. The hydraulic grade line of the 10 and 100 year storms shall be calculated and plotted on all channel profiles. Freeboard shall be a minimum of 2.5 feet for the 100 year event and shall comply with the latest FEMA regulations. The velocity range shall be 2.5 to 6.0 feet per second in unlined open channels and 3.0 to 12.0 feet per second in lined open channels. All computations shall be clearly documented and submitted to the Town Engineer for approval.

For all channels, either realigned or natural, the following shall be shown on the improvement plans in addition to the information heretofore required:

1. The profile of existing channels shall be shown for a minimum of 1000 feet at each end of the development on the construction plan to establish a minimum profile

grade.

2. Typical sections and cross sections.

- B. **Interceptor Ditches** - Interceptor ditches or approved alternates shall be placed at the top of the cut or bank where deemed necessary by the Town Engineer to prevent erosion of the channel bank. Runoff shall not be allowed to sheet flow over the top of banks.
- C. **Outfall Profiles** - All drainage outfalls shall be shown both in plan and profile on the improvement plans for a distance of 1000 feet or until a definite "daylight" condition is established. All drainage ditches upstream of the improvement shall be shown on the plan and profile sheets for a distance of at least 500 feet or until an average profile grade through the improvement is established. The profiles shall include ditch flow line and top of bank elevations.

When improvements have more than one unit, the drainage outfall shall be shown as extending to the property boundary, and beyond if required, although it may not be constructed with the current unit development. All temporary outfalls shall be shown both in plan and profile on the improvement plans.

- D. **Fencing** - Channels exceeding three feet in depth and with side slopes steeper than 3:1 shall be fenced with a six foot high chain link fence per Section 80-4 of the Caltrans Standard Specifications. In all other areas fencing shall be placed as specified by the Town Engineer. Fences shall be located 6 inches inside the drainage easement lines and a minimum of 12 inches from the top of bank. No fencing shall be allowed within the floodway of an open watercourse without the approval of the Town Engineer. Special requirements shall be specified by the Town Engineer for fencing within the 100 year floodplain of any open watercourse.

Drive gates shall be provided with a minimum width of 12 feet. A minimum 4 foot wide walk gate shall also be provided.

- E. **Access Roads** - An all weather access road consisting of six inches of compacted AB shall be provided adjacent to all channels and outfall ditches to the satisfaction of the Town Engineer. Access roads shall have a minimum width of 12 feet and shall provide bulb at end for turning movements.

**11-17 CROSS CULVERTS** - This section states the criteria for relatively short circular or box culverts for transverse crossings: typically road or railroad embankments. Cross culverts shall be of reinforced concrete or corrugated steel pipe as specified in Section 11-10.

Cross culvert profiles will be determined on an examination of the channel for a minimum distance of 1000 feet each side of the installation.

Driveway culverts shall be approved by the Town for size, grade, alignment and type. Driveway culverts will not be allowed unless the Town has agreed to defer the construction of curb and gutter except for temporary construction access.

- A. **DESIGN STORM** - Cross culvert size shall be determined on the basis of runoff as specified in the hydrology portion of this section. Cross culverts, in general, shall be designed for a 25 year storm with no head on the inlets. They shall also be sized such that no serious damage will be incurred due to ponding as a result of a 100 year event. A flood easement shall be provided for all areas impacted due to upstream ponding. Culverts across arterials shall be sized for the 100 year storm with a minimum of 1 foot of freeboard.

Minimum size of cross culvert shall be 18-inches.

- B. **COMPUTATION OF FLOW** - Inlet or outlet conditions control flow in transverse culverts. In culverts operating under inlet control, the cross-sectional area of the culvert barrel, the inlet geometry and the amount of headwater at the entrance are of primary importance. Outlet control involves the additional consideration of the elevation of the tailwater in the outlet channel and the slope, roughness and length of the culvert barrel.

Anticipated downstream flow depth and allowable headwater depth govern the available head on culverts. The type of flow under which a culvert will operate may be determined from a given set of conditions. This may be avoided by computing headwater depths from the charts in this section for both inlet and outlet control and then using the higher value to indicate the type of control and to determine the headwater depth. This method of determining the type of control is accurate except for a few cases where the headwater depth is approximately the same for both type of control. The nomographs provided in this section shall be used for culvert design with uniform barrels. Where barrel sizes or entrance configurations differ between barrels, written calculations shall be provided to the satisfaction of the Town Engineer.

The roughness coefficient,  $n$ , can be adjusted for the nomographs by use of the following equation:

$$L_1 = L * \left[ \frac{n_1}{n} \right]^2 \quad \text{[Equation 11-6]}$$

- 11-18 **STORM WATER QUALITY** – All developments are required to provide treatment of storm water runoff both during construction and on an ongoing basis. Storm water treatment during construction is discussed in Section 12, "Grading Ordinance" and the Town's Construction Standards. Ongoing treatment requirements are addressed in this section.

- A. **Criteria** – Storm water treatment must be provided for a volume equal to 2 inches of rainfall over the entire watershed, prior to discharge into a natural stream channel. This is approximately equal to a 2 year frequency 6 hour storm.
- B. **Treatment Control Measures** – These are several measures being used around the country that have been found to be effective. Choosing the best method will depend on factors such as quantity of storm water to be treated, maintenance requirements, hydraulic characteristics of the system, and type of pollutants to remove. The consulting engineer is referred to the "California Storm Water Best Management Practices Handbooks" for municipal, commercial/industrial, and construction activities prepared for the Storm Water Quality Task Force, and the "Guidance Manual for On Site Storm Water Quality Control Measures" by the Town and County of Placer.
- C. **Design** – The Consulting Engineer shall prepare a water quality master plan showing location and approximately size of facilities. Calculations shall accompany the design review submittal which justifies the design of the treatment control measure. Design of the storm drain system and treatment control measure shall include a bypass capability so that only the flow to be treated is diverted to the treatment control measure.
- D. **Construction** – The treatment control measure must be completed and functioning prior to acceptance of project improvements.

SECTION 12

GRADING, EROSION AND SEDIMENT CONTROL

MUNICIPAL CODE TITLE 12  
ORDINANCE 55

**DRAFT**

## Chapter 12.04

### GRADING, EROSION AND SEDIMENT CONTROL

#### Sections:

#### ARTICLE I. PURPOSE AND DEFINITIONS

- 12.04.010 Title.
- 12.04.020 Purpose.
- 12.04.030 Definitions.

#### ARTICLE II. GENERAL REQUIREMENTS

- 12.04.040 Grading permit - Required.
- 12.04.050 Grading permit - Exemptions.

#### ARTICLE III. GENERAL RESTRICTIONS

- 12.04.060 Grading.
- 12.04.070 Water obstruction.
- 12.04.080 Levee work.
- 12.04.081 Earth-Filled Dams.
- 12.04.090 Construction in public rights-of-way.
- 12.04.100 Hazards.
- 12.04.110 Not retroactive.
- 12.04.120 Administration.

#### ARTICLE IV. PROCEDURES

- 12.04.130 Filing.
- 12.04.140 Compliance with CEQA.
- 12.04.150 Referral to other public agencies.
- 12.04.160 Permit conditions.
- 12.04.161 Transfer of Responsibility for Certification.
- 12.04.162 Transfer of Permit.
- 12.04.163 Amendment to Permit.
- 12.04.170 Permission of other agencies or owners.
- 12.04.180 Location of property lines.
- 12.04.190 Time limits.
- 12.04.200 Validity.
- 12.04.210 Appeals.

ARTICLE V. PLANS AND  
SPECIFICATIONS

- 12.04.220 Application-Plans.
- 12.04.230 Minor and Rough grading plans.
- 12.04.240 Finished grading plans.
- 12.04.260 Modification of approved plans.
- 12.04.270 Seasonal requirements.
- 12.04.280 Distribution and use of approved plans.

ARTICLE VI. PERMIT  
REQUIREMENTS

- 12.04.290 General.
- 12.04.300 Fees.
- 12.04.310 Geotechnical investigation required.
- 12.04.320 Investigations.
- 12.04.330 Reports-General.
- 12.04.340 Soil/geologic investigation report.
- 12.04.350 Final report.
- 12.04.360 Changed conditions.
- 12.04.370 Special inspection.
- 12.04.380 Noncompliance notification by private geotechnical engineer.
- 12.04.390 Periodic progress reports by private geotechnical engineer.
- 12.04.400 Progress reports by permittee.
- 12.04.410 Submit as-built plan.
- 12.04.420 Performance of work- Inspection.
- 12.04.430 Other responsibilities of permittee.

ARTICLE VII. DESIGN STANDARDS

- 12.04.440 Excavation.
- 12.04.450 Excavation slope.
- 12.04.460 Fill placement.
- 12.04.470 Fill compaction.
- 12.04.480 Ground preparation for fill placement.
- 12.04.490 Fill slopes.
- 12.04.500 Adjacent structures protection.
- 12.04.510 Setback-General.
- 12.04.511 Special Grading Requirements
- 12.04.520 Drainage-General.
- 12.04.530 Drainage-Disposal requirements.
- 12.04.540 Drainage-Water accumulation.
- 12.04.550 Drainage protection of adjoining property.
- 12.04.560 Terrace drainage.
- 12.04.570 Subsurface drainage.
- 12.04.580 Erosion and sediment control.
- 12.04.590 Emergency conditions.
- 12.04.600 Erosion and sediment control plans.

- 12.04.610 Vehicular ways- General.
- 12.04.620 Vehicular ways- Drainage.
- 12.04.621 Dust Control.

#### ARTICLE VIII. PERFORMANCE SECURITY

- 12.04.630 Performance security required.

#### ARTICLE IX. ENFORCEMENT

- 12.04.640 Suspension and revocation of permit.
- 12.04.650 Corrective work.
- 12.04.660 Nonexclusive remedies.

#### ARTICLE X. ADDITIONAL PROVISIONS

- 12.04.670 Enforcement official.
- 12.04.680 Right of entry.
- 12.04.690 Stop work orders.
- 12.04.700 Liability.
- 12.04.710 Denial of other permits.
- 12.04.720 Notice to adjacent owners.

## ARTICLE I. PURPOSE AND DEFINITIONS

### 12.04.010 Title.

The ordinance codified in this chapter shall be known as the grading ordinance of the town of Loomis. (Ord. 55 § 1, 1987)

### 12.04.020 Purpose.

~~This chapter is enacted for the purpose of regulating grading on private property within the town to safeguard life, limb, health, property and public welfare; to avoid pollution of watercourses with nutrients, sediments, or other earthen materials generated on or caused by surface runoff on or across the permit area; and to ensure that the intended use of a graded site is consistent with the town general plan, any specific plans adopted thereto and applicable town ordinances including the zoning ordinance and Chapter 70 of the Uniform Building Code. (Ord. 55 § 1.01, 1987)~~

*This chapter establishes standards for the preparation of sites and construction activities to protect the health, safety and general welfare of those working or living on or near the site by protecting against unwarranted or unsafe grading, drainage work or other aspects of site development as follows:*

*1. To establish standards and procedures for grading and excavating so as to minimize hazards to life and limb, protect against erosion, maintain the natural environment, and protect the safety, use and stability of public right-of-way and drainage channels;*

*2. To assure that projects approved under this chapter will be free from harmful effects of runoff, including inundation and erosion, and that neighboring and downstream properties will be protected from drainage problems resulting from new development;*

*3. To assure proper restoration of vegetation and soil systems disturbed by grading or fill activities authorized under this chapter. It is intended through this chapter to maintain an attractive and healthy landscape and to control against dust and erosion and their consequent effects on soil structure and water quality;*

*4. To ensure that the intended use of a graded site is consistent with the Town General Plan, any specific plans, and design and construction guidelines or standards adopted thereto and applicable town ordinances and Chapter 70 of the Uniform Building Code.*

### 12.04.030 Definitions

Unless the particular provision or the context otherwise requires, wherever the following terms are used in this chapter, they shall have the meaning ascribed to them in this section:

“Agricultural operation” means any land related activity for the purpose of cultivating or raising plants or animals or conserving or protecting lands for such purposes when conducted on agriculturally zoned lands and does not mean surface mining or borrow pit operations.

“Bedrock” means the solid undisturbed rock in place either exposed at the ground surface or beneath surficial deposits of loose rock or soil.

“Bench” means a relatively level step excavated into sloping natural ground on which engineered fill or embankment fill is to be placed.

“Civil engineer” means a professional engineer registered as a civil engineer by the state of California.

“Compaction” means the increase of density of a soil or rock fill by mechanical means.

“Cut.” See “Excavation.”

“Depth of fill” means the vertical dimension from the exposed fill surface to the original ground surface.

“Depth of excavation (cut)” means the vertical dimension from the exposed cut surface to the original ground surface.

“Director of public works” means the director of public works of the town, acting either directly or through his authorized deputies.

“Embankment.” See “Fill.”

“Encroachment permit” means a written permit issued by the department of public works authorizing certain work within a publicly maintained right-of-way.

“Engineering geologist” means a registered geologist certified as an engineering geologist by the state of California.

“Engineering geology” means the application of geologic knowledge in the investigation and evaluation of naturally occurring rock and soil for use in the design of civil works.

“Erosion” means the wearing away and transportation of earth material as a result of the movement of wind, water or ice.

“Excavation (cut)” means the removal of naturally occurring earth materials by mechanical means, and includes the conditions resulting therefrom.

“Existing grade” means the elevation of the ground surface at a given point prior to excavating or filling.

“Expansive soil” means any soil which exhibits significant expansive properties as determined by a geotechnical engineer or the director of public works.

“Fill (embankment)” means the deposit of soil, rock or other materials placed by man and includes the conditions resulting therefrom.

“Finish grade” means the final grade of the site after excavating or filling which conforms to the approved final grading plan. The finish grade is also the grade at the top of a paved surface.

“Geologic hazard” means any condition in naturally occurring earth materials which may endanger life, health or property.

“Geotechnical engineer” means a civil engineer registered by the state of California who is qualified in the field of soil mechanics and soil engineering and has the authority to use the title “soil engineer.”

“Geotechnical engineering” means the application of the principles of soil mechanics in the investigation, evaluation and design of civil works involving the use of earth materials and may include the inspection, testing and construction thereof.

“Grade” means the vertical location of the ground surface.

“Existing grade” means the grade prior to grading.

Grade, Finished. "Finished grade" means the final grade of the site which conforms to the approved plan.

Grade, Rough. "Rough grade" means the stage at which the grade approximately conforms to the approved plan.

"Grading" means any land excavation or filling or combination thereof, or the removal, plowing under or burial of vegetative groundcover or importing or exporting of material whether temporary or permanent placement.

"Grading plan" means a plan prepared in accordance with this chapter showing grading and related work.

"Grading work" means grading and related work, such as, but not limited to, drainage improvements and erosion and sediment control.

"Keyway" means a special backfilled excavation which is constructed beneath the toe area of a planned fill slope on sloping ground to improve the stability of the slope.

"Landscape architect" means a landscape architect registered by the state of California.

"Lot." See "Parcel."

"Owner" means the person shown as the legal owner of the property on the latest equalized assessment roll in the office of the county assessor.

"Parcel (lot)" means land described as a lot or parcel in a recorded deed or shown as a lot or parcel on a subdivision map or parcel map on file in the county recorder's office.

"Permit" means an approved grading permit issued pursuant to this chapter authorizing certain grading work.

"Permittee" means any person to whom a permit is issued pursuant to this chapter.

"Person" means any natural person, firm, corporation or public agency whether principal, agent, employee, or otherwise.

"Preliminary grading plan" means a plan that shows the proposed grading work in relation to the existing site prepared and submitted with the application for a grading permit.

"Rainy season" means the period of the year during which there is a substantial risk of rainfall. For the purpose of this chapter, the rainy season is defined as being from October 15 to May 1, inclusive.

"Sediment" means any material transported or deposited by water, including soil debris or other foreign matter.

"Site" means any lot or parcel of land or combination of contiguous lots or parcels of land, whether held separately or joined together in common ownership or occupancy, where grading is to be performed or has been performed.

"Slope" means an inclined ground surface the inclination of which may be expressed as the ratio of horizontal distance to vertical distance.

"Soil" means all earth material of any origin that overlies bedrock and may include the decomposed zone of bedrock which can be excavated readily by mechanical equipment.

"Terrace" means a relatively level step constructed in the face of a graded slope surface for drainage, maintenance or other purposes.

"Vehicular way" means a private roadway or driveway.

"Watercourse" means any natural or manmade channel flowing continuously or

intermittently in a definite direction and course or used for the holding, delay or storage of waters, which functions at any time to convey or store stormwater runoff. Natural channels shall generally be limited to those designated by a solid line or a dash and three dots as shown in blue on most recent U.S. Geological Survey 7.5 minute series of topographic maps. At the discretion of the director of public works, the definition of natural channel may be limited to those channels having a watershed area of fifty acres or more, and this definition will be commonly used in connection with the administration of this chapter except for those cases in which the director of public works determines that the definition must be extended to a natural channel with a watershed smaller than fifty acres in order to prevent a condition which is a menace to life and limb, endangers property, is a hazard to public safety, adversely affects the safety, use or serviceability of adjacent property, public way or drainage channel, or could adversely affect the water quality of any water bodies or watercourses where the definition not extended to a particular natural channel with a watershed below fifty acres.

“Work.” See “Grading work.” (Ord. 55 § 1.03, 1987)

## ARTICLE II. GENERAL REQUIREMENTS

### 12.04.040 Grading permit-Required.

Except for the specific exemptions listed hereinafter, no person shall do or permit to be done any grading on any site in the town without a valid permit obtained from the director of public works.(Ord. 55 § 1.03, 1987)

### ~~12.04.050 Grading permit-Exemptions~~

~~————The following grading may be done without obtaining a permit, unless such grading would result in a condition in violation of other provisions of this chapter or other ordinances of the town:~~

~~————A. Minor projects which have cuts or fills, each of which is less than five feet in vertical depth at its deepest point measured from the existing ground surface, and which include all of the following:~~

- ~~1. Less than fifty cubic yards of graded material;~~
- ~~2. The removal, plowing under or burial of less than ten thousand square feet of vegetation on slopes ten percent or greater or any amount of vegetation on slopes less than ten percent;~~
- ~~3. Do not create unstable or erodible slopes;~~
- ~~4. Do not encroach onto sewage disposal systems or areas;~~
- ~~5. Is not within seventy five feet of the center of a natural watercourse or not within the FEMA floodplan; and~~
- ~~6. Has less than one minor grading project within previous twelve months.~~

~~B. Grading done by or under the supervision or construction control of a public agency that assumes full responsibility for the work.~~

~~C. Excavations in connection with a swimming pool authorized by a valid building permit.~~

~~D.—Grading necessary for agricultural operations unless such grading will create a cut or fill whose failure could endanger any structure intended for human or animal occupancy or any public road, or could obstruct any watercourse or drainage conduit.~~

~~E.—Trenching and grading incidental to the construction or installation of approved underground pipe lines, septic tank disposal fields, conduits, electrical or communication facilities, and drilling or excavation for approved wells or post holes.~~

~~F.—Excavations for soil or geological investigations by a geotechnical engineer or engineering geologist.~~

~~G.—Grading in accordance with plans incorporated in an approved surface mining permit, reclamation plan or sanitary landfill.~~

~~H.—Maintenance of existing firebreaks and roads to keep the firebreak or road substantially in its original condition.~~

~~I.—Routine cemetery excavations and fills.~~

~~J.—Performance of emergency work necessary to protect life or property when an urgent necessity therefore arises. The person performing such emergency work shall notify the director of public works promptly of the problem and work required and shall apply for a permit therefore within ten calendar days after commencing said work.~~

Exemption from the requirement of a permit shall not be deemed to be permission to violate any other provision of this chapter. The provisions of tree preservation standards adopted by the town may also apply to any grading operation.  
(Ord. 116 § 1, 1992; Ord. 55 § 1.04, 1987)

#### 12.04.050 Grading permit - Exemptions

A grading permit is not required if the proposed work consists of the following activities and such activities will not endanger adjacent property, cause increased erosion, sedimentation and rate of water runoff, divert or impair the flow of water within a water course or cause a public nuisance. All development activities exempt from the grading permit requirements shall be carried out in a manner consistent with the design principles and standards set out herein to assure that the potential for erosion of any project is minimized. However, this does not relieve the property owner or contractor from abiding by Chapter 13.54, "Tree Preservation and Protection".

A grading permit is not required for the following:

1. Excavation below finished grade for basements and footings of a building, retaining wall, swimming pool, or other structure authorized by a valid building permit. This shall not exempt any fill made with the material from such excavation nor exempt any excavation having an unsupported height greater than five feet after the completion of such structure;

2. Routine cemetery excavations and fills;

3. Excavations or fills when all the following conditions are met:

a. Less than fifty (50) cubic yards of grading material.

b. The depth/fill is three (3) feet or less.

c. The slope of the cut/fill face is two feet horizontal to one foot vertical or less.

d. The existing drainage patterns are not altered;

4. The removal, plowing under or burial of less than ten thousand square feet of vegetation on slopes ten percent or greater or any amount of vegetation on slopes less

than ten percent. This does not include trees, which shall follow Chapter 13.54, "Tree Preservation and Protection":

5. Do not encroach onto sewage disposal systems or areas;

6. Is not within seventy-five feet of the center of a natural watercourse or not within the FEMA floodplain;

7. Has less than one minor grading project within previous twelve months;

8. Grading necessary for agricultural operations land leveling less than three feet in height unless such grading will create a cut or fill whose failure could endanger any structure intended for human or animal occupancy or any public road, or could obstruct any watercourse or drainage conduit;

9. Clearing vegetation when all of the following conditions are met (this does not include trees, which shall follow Chapter 13.54, "Tree Preservation and Protection" covered under the Loomis Zoning Ordinance):

a. The slope of the ground is twenty percent or less.

b. The area to be cleared is one acre or less;

10. Trenching and grading incidental to the construction or installation of approved underground pipe lines, septic tank disposal fields, conduits, electrical or communication facilities, and drilling or excavation for approved wells or post holes.

11. Excavations for soil or geological investigations by a geotechnical engineer or engineering geologist.

12. Grading in accordance with plans incorporated in an approved surface mining permit, reclamation plan or sanitary landfill.

13. Maintenance of existing firebreaks and roads to keep the firebreak or road substantially in its original condition.

14. Performance of emergency work necessary to protect life or property when an urgent necessity therefore arises. The person performing such emergency work shall notify the director of public works promptly of the problem and work required and shall apply for a permit therefore within ten calendar days after commencing said work.

Exemption from the requirement of a permit shall not be deemed to be permission to violate any other provision of this chapter. The provisions of tree preservation standards adopted by the town may also apply to any grading operation.

### ARTICLE III. GENERAL RESTRICTIONS

#### 12.04.060 Grading.

No person shall do or permit to be done any grading in such a manner that quantities of dirt, soil, rock, debris, or other material substantially in excess of natural levels are washed, eroded, or otherwise moved from the site, except as specifically provided for by a permit. (Ord. 55 § 1.05, 1987)

**12.04.070 Water obstruction.**

No person shall do or permit to be done any grading which may obstruct, impede or interfere with the natural flow of stormwaters, whether such waters are unconfined upon the surface of the land or confined within land depressions or natural drainage ways, unimproved channels or watercourses, or improved ditches, channels or conduits, in such manner as to cause flooding where it would not otherwise occur, aggravate any existing flooding condition or cause accelerated erosion except where said grading is in accordance with all applicable laws, including but not limited to these permit requirements. (Ord. 55 § 1.06, 1987)

**12.04.080 Levee work.**

No person shall excavate or remove any material from or otherwise alter any levee required for river, creek, bay, or local drainage control channel, without prior approval of the director of public works. (Ord. 55 § 1.07, 1987)

**12.04.081 Earth-filled dams.**

For the purpose of creating ponds or catching storm water, earth-filled dams require a grading permit. Such requirements may be waived on a case-by-case basis by the director of public works where the following conditions exist:

1. The proposed dam will not create a hazard to private property and/or improvements.
2. The proposed dam will not affect existing drainage patterns or create erosion hazards.

**12.04.090 Construction in public rights-of-way.**

No person shall perform any grading work within the right-of-way of a public road or street, or within a public easement, without prior approval of the director of public works. (Ord. 55 § 1.08, 1987)

**12.04.100 Hazards.**

Whenever the director of public works determines that any grading on private property constitutes a condition which is a hazard to public safety, endangers property, use or stability of adjacent property, or an overhead or underground utility, or a public way, watercourse or drainage channel, or could adversely affect the water quality of any water bodies or watercourses, the owner of the property upon which the condition is located, or other person or agent in control of said property, upon receipt of notice in writing from the director of public works shall, within the period specified therein, obtain a grading permit and conform to the conditions of said permit. The director of public works may require the submission of plans or soil or geological reports, detailed construction recommendations, or other engineering data prior to and in connection with any corrective or proposed work or activity. (Ord. 55 § 1.09, 1987)

**12.04.110 Not retroactive.**

This chapter shall be prospective in operation only. The provisions of this chapter shall not apply to existing construction for which all previously necessary permits were obtained. Said provisions shall also not apply to a project or development not yet

constructed provided that an appropriate permit has been obtained and said permit bears a date prior to the effective date of the ordinance codified in this chapter.  
(Ord. 55 § 110, 1987)

**12.04.120 Administration.**

This chapter shall be administered for the town by the department of public works. (Ord. 55 § 1.11, 1987)

ARTICLE IV. PROCEDURES

**12.04.130 Filing.**

Applications for permits shall be filed with the director of public works on forms furnished by his office. Each application shall include a plan checking fee and other fees as required, preliminary or final grading plans and a statement of the intended use of the site. Only one application and permit is allowed for grading work to be done on a site. The director of public works shall determine whether the application is complete in accordance with provisions of Article IV herein and may require additional information from the applicant before accepting the application as complete. (Ord. 55 § 1.12, 1987)

**12.04.140 Compliance with CEQA.**

The California Environmental Quality Act (CEQA) may require the preparation of environmental documents concerning a proposed grading project. In such event, the town will be a responsible agency or may function as the lead agency. The director of public works will advise the applicant as to any additional information required with the permit application. (Ord. 55 § 1.13, 1987)

**12.04.150 Referral to other public agencies.**

The director of public works may refer an application to other interested public agencies for their recommendations. (Ord. 55 § 1.14, 1987)

**12.04.160 Permit conditions.**

A. No permit shall be granted until the director of public works is satisfied that a proposed project conforms with the town general plan, any specific plans and design and construction guidelines and standard details adopted thereto, and applicable town ordinances including the zoning ordinance.

B. Where a proposed grading project requires the filing of a tentative map or the intended use requires approval of a discretionary zoning permit, no grading permit shall be granted prior to approval by the applicable planning authority.

C. The permit shall be limited to work shown on the grading plans as approved by the director of public works. In granting a permit, the director of public works may impose any condition deemed necessary to protect the health, safety and welfare of the public, to prevent the creation of a hazard to public or private property, and to assure proper completion of the grading, including but not limited to:

1. Mitigation of adverse environmental impacts as disclosed by any environmental document findings;

2. Improvement of any existing site conditions to comply with the standards of this chapter;
3. Requirements for fencing or other protection of grading which would otherwise be hazardous;
4. Requirements for dust, erosion, sediment and noise control, hours of operation and season of work, weather conditions, sequence of work, access roads and haul routes;
5. Requirements safeguarding watercourses from excessive deposition of sediment or debris in quantities exceeding natural levels;
6. Requirements for safeguarding areas reserved for on-site sewage disposal; and
7. Assurance that the land area in which grading is proposed and for which habitable structures are proposed is not subject to hazards of land slippage or significant settlement or erosion and that the hazards of seismic activity or flooding can be eliminated or adequately reduced. (Ord. 55 § 1.15, 1987)

**12.04.161      Transfer of responsibility for certification.**

If the civil engineer, the soil engineer, the engineering geologist, or the testing agency of record are changed during the course of the work, the work shall be stopped until the replacement has agreed to accept the responsibility within the area of their technical competence for certification upon completion of the work.

**12.04.162      Transfer of permit.**

The transfer of a permit from the permittee to another person shall be subject to the written approval of the director of public works. The person to whom the permit is being transferred shall agree in writing to such modifications as may be required, and shall furnish the required security before transfer of the permit will be approved.

**12.04.163      Amendment to permit.**

All changes in the plans, grades, timing or extent of work shall be submitted to the director of public works for written approval and incorporation into the permit before any change in the work is commenced. The director of public works may amend the permit to approve such changes if appropriate, or may deny approval of such changes.

Failure to obtain prior approval for any change in the work shall be cause for the suspension of the permit until approval is obtained, and may result in the revocation of the permit if such changes are deemed to be hazardous to adjoining properties or to the public at large.

**12.04.170      Permission of other agencies or owners.**

A. The issuance of a grading permit by the town shall not relieve the permittee of responsibility for securing other permits or approvals required for work which is regulated by any other department or agency of the town, or other public agencies, or for obtaining any easements or authorization for grading on property not owned by the permittee. The director may require that each application be accompanied by written evidence that the application has obtained such permits or approvals.

B. The plans for the proposed grading submitted with each application shall clearly show and identify by reference to recorded documents each easement that affects the land upon which the grading is proposed to occur. The application shall be

accompanied by both a copy of each such recorded document and the written consent to the proposed grading executed by each person having a present lawful right to use such easement.

C. In lieu of providing such executed consent by each person having a lawful right to use the easement, the applicant may provide the town with written evidence that the applicant has given to each person who has a present lawful right to use the easement not less than thirty days written notice of the filing of the application and including a description of the grading in the easement area which is proposed in the application. Such notice shall also advise each such person that the grading permit will be issued by the town without the consent of such person unless the applicant is prohibited from obtaining or exercising such a permit by order of a court of competent jurisdiction.

D. The director of public works shall prescribe: (1) the form, content and manner of obtaining such written consents, and (2) the form, content and manner of giving of the written notices. In addition, the director of public works may require, as a condition of the approval of the permit, that the applicant agree to reimburse the town for all of its expenses incurred in determining that written consents have been properly obtained or that written notices have been properly given as required in this section, or both.

E. In addition, as a condition of the town's consideration of such application without all required consents and permissions, the director of public works shall require the applicant to agree in writing to indemnify, defend and save harmless the town, its officers, employees and agents against claims of third parties arising out of or related to the processing of or approval of such application.

F. Any application filed without the plans required by this section and the consent or notices, or both, required by this section may be determined by the director of public works to be incomplete. In addition, the director of public works may suspend or revoke any permit, as provided in Section 12.04.640, if it is determined by the director that the applicant failed to obtain all of the consents required by this section or failed to give all of the notices required by this section, or both. (Ord. 179 § 1, 1997; Ord. 55 § 1.16, 1987)

#### **12.04.180 Location of property lines.**

Whenever the location of a property line or easement or the title thereto is disputed during the application process or during a grading operation, a survey by a licensed land surveyor or civil engineer or resolution of title all at the expense of the applicant may be required by the director of public works. (Ord. 55 § 1.17, 1987)

#### **12.04.190 Time limits.**

A. The permittee shall perform and complete all the work required by the permit within time limits specified in the permit. If the work cannot be completed within the specified time, a request for an extension of time setting forth the reasons for the requested extension shall be presented in writing to the director of public works no later than thirty days prior to the expiration of the permit. The director of public works may grant additional time for the work.

B. If all the permit work required is not completed within the time limit specified in subsection (A) of this section, no further grading shall be done without renewing the permit. A written request for renewal shall be submitted to the director of public works

who may require a new application and fees depending on the time between the expiration date and the renewal request, revisions in town regulations, or changed circumstances in the immediate area. Any revised plan shall be submitted to the director of public works for review, and any costs thereof shall be at the applicant's expense. (Ord. 55 § 1.18, 1987)

#### **12.04.200 Validity.**

The issuance of a permit or approval of plans and specifications shall not be construed as an approval of any violation of the provisions of this chapter or of any other applicable laws, ordinances, rules and regulations. (Ord. 55 § 1.19, 1987)

*If any part of this chapter is found not valid, the remainder of this chapter shall remain in effect.*

#### **12.04.210 Appeals.**

Appeals on decisions pursuant to this chapter shall be made to the planning commission in writing setting forth the specific grounds thereto within fifteen calendar days from the date of such decision. (Ord. 55 § 1.20, 1987)

### **ARTICLE V. PLANS AND SPECIFICATIONS**

#### **12.04.220 Application-Plans.**

Two or more complete sets of plans, as determined by the director of public works, including but not limited to profiles, cross sections, topographic maps and specifications shall be submitted to the director of public works for enforcement of any provision of this chapter. ~~At the time of application, the applicant may provide preliminary grading plans.~~ Prior to the issuance of a grading permit, the applicant must furnish finalized minor, rough or finished grading plans. ~~Preliminary grading plans with appropriate changes and additions thereto may be accepted as final grading plans.~~ When the finalized grading plans and other required documents (such as final conditions of approval, studies, reports, estimates, etc...) have been approved and the fees paid, a grading permit will be issued by the director of public works. The work shall be done in strict compliance with the approved plans and specifications which shall not be changed or altered except in accordance with the provisions of this article. (Ord. 55 § 1.12, 1987)

#### **~~12.04.230 Preliminary grading plans.~~**

~~———— Preliminary grading plans provide for review and determination of grading permit requirements prior to approval of final plans and issuance of a grading permit. Precise design at this stage is not required. The plans shall be clearly and legibly drawn and entitled "Preliminary Grading Plan," shall contain a statement of the purpose of the proposed grading, and shall include the following:~~

~~———— A. On a map of appropriate scale, but not smaller than one inch equals one hundred feet:~~

~~1. A plan entitled "Preliminary Grading Plan" and the name and signature of preparer and date of preparation;~~

2. ~~A vicinity sketch (not at map scale) indicating the location of the site relative to the principal roads, lakes and watercourses in the area;~~
  3. ~~A site plan indicating the site of the work and any proposed divisions of land;~~
  4. ~~The complete site boundaries and locations of any easements and rights-of-way traversing and adjacent to the property, appropriately labeled and dimensioned;~~
  5. ~~The location of all existing and proposed roads, buildings, wells, pipelines, watercourses, septic systems or areas reserved for on-site sewage disposal, and other structures, facilities, and features of the site, and the location of all improvements on adjacent land within fifty feet of the proposed work;~~
  6. ~~Location and nature of known or suspected soil, ground water seepage, or geologic hazard areas;~~
  7. ~~Contour lines of the existing terrain and proposed approximate finished grade at vertical intervals not greater than two feet, showing all topographic features and drainage patterns throughout the area where proposed grading is to occur. The contour lines shall be extended to a minimum of one hundred feet outside of any future road rights-of-way;~~
  8. ~~Approximate location of cut and fill lines and the limits of grading for all the proposed grading work, including borrow and stockpile areas;~~
  9. ~~Location, width, direction of flow and approximate location of tops and toes of banks of any watercourses;~~
  10. ~~Approximate boundaries of any areas with a history of flooding;~~
  11. ~~Proposed provisions for storm drainage control and any existing or proposed flood control facilities or septic tank disposal fields or areas reserved for on-site sewage disposal in the vicinity of the grading;~~
  12. ~~A conceptual plan for erosion and sediment control including both temporary facilities and long term site stabilization features such as planting or seeding for the area affected by the proposed grade. This requirement may be waived by the director of public works for sites having no slopes greater than five percent unless the large size of the site, its proximity to sensitive areas or other conditions make an erosion or sediment discharge hazard possible;~~
  13. ~~North arrow and scale;~~
  14. ~~General location and character of vegetation covering the site;~~
  15. ~~Exact location of trunk and dripline of all existing trees six inches DBH ("diameter breast height," or diameter of trunk four feet six inches above natural ground, or nineteen inches in circumference at the same height) in diameter or larger within twenty-five feet of any proposed grading. Trees proposed for removal shall be indicated on the plan along with the reason for removal; and~~
  16. ~~Exact location, size, and description of all rock outcrops of ten-square feet area or larger within the area of proposed grading.~~
- B. ~~Typical cross sections (not less than two) of all existing and proposed graded areas taken at intervals not exceeding two hundred feet and at locations of maximum cuts and fills.~~
- C. ~~An estimate of the quantities of excavation and fill, including quantities to be moved both on and off site.~~
- D. ~~The estimated starting and completion dates of grading.~~
- (Ord. 55 § 1.22, 1987)

12.04.230 Minor and Rough grading plans.

A. Minor Grading. A minor grading plan is to be submitted where the grading includes less than five thousand cubic yards total of cut and fill where the director of public works has determined that a grading project is of minor nature due to the absence of:

1. Steep slopes (greater than or equal to fifteen percent);
2. Location in a geologic study area or flood hazard area;
3. Potential damage to structure on or adjacent to the subject site;
4. Potential blockage of drainage channels;
5. Potential impairment of significant natural vegetation, biological habitats, public views or other sensitive natural resources.

A minor grading plan is to consist of the following as determined by the public works director, provided that information submitted with any required plot plan, site plan, or development plan may also be used to fulfill those submittal requirements:

1. Vicinity map indicating the location of the site relative to the principal roads, lakes, watercourses and land marks in the area;
2. Property limits of the site;
3. Generalized existing contours and drainage channels including those areas of the subject site and adjoining properties that will be affected by the disturbance either directly or through drainage alterations;
4. The location of all existing and proposed roads, buildings, wells, pipelines, watercourses, septic systems or areas reserved for on-site sewage disposal, and other structures, facilities, and features of the site, and the location of all improvements on adjacent land within fifty feet of the proposed work;
5. Location and nature of known or suspected soil, ground water seepage, or geologic hazard areas;
6. Contour lines of the existing terrain and proposed approximate finished grade at vertical intervals not greater than two feet, showing all topographic features and drainage patterns throughout the area where proposed grading is to occur. The contour lines shall be extended to a minimum of one hundred feet outside of any future road rights-of-way;
7. Approximate location of cut and fill lines and the limits of grading for all the proposed grading work, including borrow and stockpile areas;
8. Approximate location, width, direction of flow and approximate location of tops and toes of banks of any watercourses;
9. Approximate boundaries of any areas with a history of flooding;
10. Proposed provisions for storm drainage control and any existing or proposed flood control facilities or septic tank disposal fields or areas reserved for on-site sewage disposal in the vicinity of the grading;
11. A conceptual plan for erosion and sediment control including both temporary facilities and long term site stabilization features such as planting or seeding for the area affected by the proposed grade. This requirement may be waived by the director of public works for sites having no slopes greater than five percent unless the

large size of the site is in proximity to sensitive areas or other conditions that make an erosion or sediment discharge hazard possible;

12. North arrow and scale;

13. General location and character of vegetation covering the site;

14. Exact location of trunk and dripline of all existing trees six inches DBH ("diameter breast height," or diameter of trunk four feet six inches above natural ground, or nineteen inches in circumference at the same height) in diameter or larger within twenty-five feet of any proposed grading. Trees proposed for removal shall be indicated on the plan along with the reason for removal; and

15. Approximate location, size, and description of all rock outcrops of ten square feet area or larger within the area of proposed grading.

16. The estimated starting and completion dates of grading.

B. Rough Grading. A rough grading plan is to be submitted for any grading in excess of five thousand cubic yards or where the director of public works has determined that a grading project should be engineered, based on the presence of:

1. Steep slopes;

2. Location in a geologic study area or flood hazard area;

3. Potential damage to structure on or adjacent to the subject site;

4. Potential blockage of drainage channels;

5. Potential impairment of significant natural vegetation, biological habitats, public views or other sensitive natural resources.

A Rough Grading plan is to be drawn to scale (preferably 20 or 40 scale) on sheets twenty-four inches by thirty-six inches and is to be of sufficient clarity to indicate the nature and extent of the work proposed and show in detail that it will conform to the provisions of this chapter. Plans and specifications are to be prepared and signed by a civil engineer and are to include the following information as determined by the director of public works:

1. Vicinity map at a scale of one inch equals one hundred feet;

2. Property limits of the subject site;

3. Details of terrain and area drainage and accurate contours of existing ground at intervals determined by the public works director;

4. Location of any buildings or structures that are within fifty feet of the area which may be affected by the proposed grading operations;

5. Limiting dimensions, elevations of finished contours to be achieved by the grading, and proposed drainage channels and related construction;

6. Specifications covering construction and material requirements;

7. Soil engineering report to include data regarding the nature, distribution and strength of the existing soils, conclusions and recommendations for grading procedures and criteria for corrective measures when necessary, and opinions and recommendations covering adequacy of sites to be developed by the proposed grading;

8. Engineering geology report to include a description of the site, conclusions and recommendations regarding the effect of geologic conditions and recommendations covering the adequacy of sites to be developed by the proposed grading;

9. A statement indicating methods to mitigate any conditions whereby the director of public works may require an engineering grading plan such as steep slopes, location in a geologic study area or flood hazard area, potential damage to structures on the subject site or adjacent property, potential impairment of natural vegetation, habitat, public view or other sensitive resources;

10. Drainage study and plan if not included in any of the above;

11. Erosion control plan and/or recommendation for mitigation measures;

12. An estimate of the quantities of excavation and fill, including quantities to be moved both on and off site;

13. Cost estimate of the grading work;

14. Tentative schedule of the starting and completion dates of the grading.

**12.04.240 ~~Final~~ Finished grading plans-Engineer-required.**

~~Final~~ Finished grading plans and specifications shall be prepared and signed by a civil engineer, except as otherwise provided herein, on sheets twenty-four inches by thirty-six inches. The plans shall include the following, in addition to all requirements for preliminary under the rough grading plans:

A. A title block. Plans shall be entitled "Grading Plan" and state the purpose of the proposed grading and the name of the engineer or firm by whom this plan is prepared;

B. Accurate contour lines at intervals not greater than two feet, showing topographic features and drainage patterns and the configuration of the ground before and after grading, relative to a bench mark established on site, based on U.S.G.S. datum;

C. Point elevations, improvement elevations and finished floor elevations for each lot;

~~C.~~ D. Construction details for roads, watercourses, culverts, bridges and drainage devices, retaining walls, cribbing, dams, and other improvements existing or to be constructed, together with supporting calculations and maps as required;

E. Complete construction specifications, including progress schedule of work;

F. A detailed erosion and sediment control plan including specific locations, construction details and supporting calculations for temporary and permanent sediment control structures and facilities;

G. A landscaping plan, including temporary erosion control plantings, permanent slope plantings, replacement of temporary groundcover, and irrigation facilities. On trees to remain provide detailed drawings for wells, retaining walls, or aeration system to be installed for each tree. Indicate fencing the drip lines to prevent equipment or vehicles operating or parking under the trees. Provide signing for contractors indicating that trees to remain are to be protected;

H. An estimate of the quantities of excavation and fill, adjusted for anticipated swell or shrinkage;

I. The location of any borrow site or location for disposal of surplus material;

J. A projected schedule of operations, including, as a minimum, the dates of:

1. Commencement of work,

2. Start and finish of rough grading,

3. Completion of drainage facilities,

4. Completion of work in any watercourse,

5. Completion of erosion and sediment control facilities, and

6. Completion of hydromulching and other landscaping. If rough grading is proposed between October 15 and May 1, a more detailed schedule of grading activities and use of erosion and sediment control facilities may be required;

K. Itemized cost estimate of the proposed grading and related work.  
(Ord. 55 § 1.23, 1987)

L. Certificate of Compliance.

A Certificate of Compliance note with signature blocks for both the registered civil engineer and the geotechnical engineer shall be provided on the plans and stating the following:

CERTIFICATE OF COMPLIANCE FOR GRADING  
I HEREBY CERTIFY THAT THE GRADES SHOWN ON THESE PLANS AND  
APPROVED BY THE DEPARTMENT OF PUBLIC WORKS, HAVE BEEN  
CONSTRUCTED TO WITHIN 1/10<sup>TH</sup> OF ONE FOOT OF THEIR INDICATED  
ELEVATION FOR ALL LOT PADS AND IMPROVEMENTS SHOWN.

PROJECT ENGINEER                      LICENSE NUMBER                      DATE

I HEREBY CERTIFY THAT THE PADS FOR THE FOLLOWING LOTS FOR THIS  
PROJECT HAVE BEEN TESTED FOR COMPACTION IN ACCORDANCE WITH  
GENERALLY ACCEPTED TEST METHODS AND BASED UPON THE RESULTS OF  
THESE TESTS THE COMPACTION OF SAID PADS CONFORMS TO THE  
RECOMMENDATIONS OF THIS PROJECTS GEOTECHNICAL REPORT.  
LOTS:

I ALSO STATE THAT OUR FIRM OBSERVED THE GRADING OPERATION TO A  
SUFFICIENT EXTENT TO EVALUATE CONFORMANCE WITH THE PROJECTS  
GEOTECHNICAL REPORT AS APPROVED BY THE TOWN AND FURTHER STATE  
THAT BASED UPON OUR OBSERVATIONS, THE GRADING FOR THIS PROJECT  
CONFORMS WITH THE RECOMMENDATION OF SAID SOIL REPORT.

GEOTECHNICAL ENGINEER                      LICENSE NUMBER                      DATE

**~~12.04.250 — Final grading plans — Engineer not required.~~**

~~—— All plans and specifications shall be prepared and signed by a civil engineer except that the director of public works may waive this requirement if the grading is minor in nature; would not endanger the public health, safety or welfare as determined by the director of public works; and would not involve or require any of the following:~~

~~—— A. Cuts and fills within a combined total of one thousand five hundred cubic yards or more;~~

~~B. An access road serving three or more existing or potential residences;~~

~~—— C. A cut or fill that is intended to support structure or property;~~

~~—— D. A cut or fill that is located so as to cause unduly increased pressure or reduce support upon any adjacent structure or property;~~

~~\_\_\_\_\_E. The construction of any extensive drainage or sediment control structures, culverts, or facilities or alteration of any existing drainage course; or~~  
~~\_\_\_\_\_F. The creation or aggravation of an unstable slope condition.~~  
(Ord. 55 §1.24, 1987)

**12.04.260 Modification of approved plans.**

A. Proposed modifications of an approved final plan shall be submitted to the director of public works for his written approval.

B. All necessary soils and geological information and design details shall accompany any proposed modification.

C. The modification shall be compatible with any subdivision map or land use requirements. (Ord. 55 §1.25, 1987)

**12.04.270 Seasonal requirements.**

Implementation of erosion and sediment control plans shall be based on the season of the year and the stage of construction at forecasted periods of rainfall and heavy storms. Erosion and sediment control plans shall allow for possible changes in construction scheduling, unanticipated field conditions and relatively minor changes in grading. Modifications to plans may be required after initial plan approval.  
(Ord. 55 § 1.26, 1987)

**12.04.280 Distribution and use of approved plans.**

~~Two~~ Three sets of approved plans and specifications shall be retained by the director of public works and one or more sets of approved and dated plans and specifications shall be provided to the applicant or his engineer. One set of approved plans and permit shall be retained on the site at all times during the work. (Ord. 55 § 1.27, 1987)

ARTICLE VI. PERMIT  
REQUIREMENTS

**12.04.290 General.**

The director of public works will issue a grading permit if ~~final~~ the required grading plans satisfy the provisions of this chapter or any of the conditions imposed. The director of public works shall identify the provision, requirement or condition which has not been met or performed by the applicant in the event the issuance of a grading permit is denied. (Ord. 55 §1.28, 1987)

**12.04.300 Fees.**

A. The schedule of fees and costs shall be those established and adopted by the council from time to time by resolution. Before a permit is issued, the applicant shall deposit with the director of public works cash or a check, in a sufficient sum to cover the fee for issuance of the permit, charges for review of plans, specifications and reports, other engineering services, field investigations, necessary inspection or other work and routine laboratory tests of materials and compaction, all in accordance with schedules established and adopted by the council.

B. No fee shall be required of public agencies.

C. Public utilities may, at the option of the director of public works, make payment for the above charges as billed by the director of public works instead of by advance deposit as required above.

D. If, upon completion of any work under a permit there remains any excess of deposit or fees or charges, the director of public works shall certify the same to the town treasurer for refund to the permittee or refund the same from any trust fund established under his jurisdiction for purposes.

E. If, upon completion of any work under a permit there is an insufficient deposit to cover the cost of the work, the director of public works may require the permittee to reimburse the amount equal to the cost deficit before further permits may be issued for work on the parcel.

F. If grading work is done in violation of this chapter or such work is not done in accordance with an approved permit, a fee covering investigation of any violation and inspection and plan checking of work required to correct such violation shall be charged to the violator to cover all actual costs. (Ord. 55 § 1.29, 1987)

#### **12.04.310 Geotechnical investigation required.**

A soil or geologic investigation report shall accompany the application in any of the following circumstances:

A. When the proposed grading includes a cut or fill exceeding ten feet in depth at any point; however, for vehicular ways, a soil investigation shall not be required unless the grading includes a proposed cut or fill that exceeds ten feet in depth and the slope of the natural ground exceeds thirty percent;

B. When highly expansive soils are suspected on the site;

C. In areas of known or suspected geological hazards, including landslide hazards and hazards of ground failure stemming from seismically induced ground shaking. (Ord. 55 § 1.30, 1987)

#### **12.04.320 Investigations.**

A. Those portions of the soil or geologic investigation that constitute "civil engineering" as defined by Section 6734 of the Business and Professions Code of the state of California shall be conducted by a geotechnical engineer. Those portions of the investigation that involve the practice of "geology" as defined by Section 7802 of the Business and Professions Code of the state of California shall be conducted by an engineering geologist.

B. The investigations shall be based on observations and tests of the material exposed by exploratory borings or excavations and inspections made at appropriate locations. Additional studies may be necessary to evaluate soil and rock strength, the effect of moisture variation on soil, bearing capacity, compressibility, expansiveness, stability and other factors. (Ord. 55 § 1.31, 1987)

#### **12.04.330 Reports-General.**

Any soil or geologic investigation report shall be incorporated in the final plans and specifications. (Ord. 55 § 1.32, 1987)

#### **12.04.340 Soil/geologic investigation report.**

The soil or geologic investigation report shall contain all of the following as they may be applicable to the subject site:

- A. An index map showing the regional setting of the site;
- B. A site map showing the topographic features of the site and locations of all soil borings and test excavations;
- C. A classification of the soil types (Unified Soil Classification); pertinent laboratory test data; and consequent evaluation regarding the nature, distribution and strength of existing soils;
- D. A description of the geology of the site and geology of the adjacent areas when pertinent to the site;
- E. A suitably scaled map and cross-sections showing all identified areas of land slippage.
- F. A description of any encountered groundwater or excessive moisture conditions;
- G. A description of the soil and geological investigative techniques employed;
- H. A log for each soil boring and test excavation showing elevation at ground level and the depth of each soil or rock strata;
- I. An evaluation of the stability of pertinent natural slopes and any proposed cut and fill slopes;
- J. An evaluation of settlement associated with the placement of any fill;
- K. Recommendations for grading procedures and specifications, including methods for excavation and subsequent placement of fill;
- L. Recommendations regarding drainage and erosion control, and control of subsurface water; and
- M. Recommendations for mitigation of geologic hazards. (Ord. 55 § 1.33, 1987)

#### **12.04.350 Final report.**

Upon completion of minor, rough or finished grading work, the director of public works may require a final geotechnical report that includes, but is not necessarily limited to the following:

- A. A complete record of all field and laboratory tests including location and elevation of all field tests;
- B. A professional opinion regarding slope stability, soil bearing capacity, and any other pertinent information;
- C. Recommendations regarding foundation design, including soil bearing potential, and building restrictions or setbacks from the top or toe of slopes; and
- D. A declaration by the geotechnical engineer or engineering geologist in the format required by the director of public works that all work was done in substantial accordance with the recommendations contained in the soil or geologic investigation reports as approved and in accordance with the approved plans and specifications. (Ord. 55 § 1.34, 1987)

#### **12.04.360 Changed conditions.**

Where soil or geologic conditions encountered in the grading operation deviate from that anticipated in the soil and geologic investigation reports or where such

conditions warrant changes to the recommendations contained in the original soil investigation, a revised soil or geologic report shall be submitted for the approval of the director of public works. (Ord. 55 § 1.35, 1987)

**12.04.370 Special inspection.**

A. As the condition of the permit, the director of public works may require the permittee to provide a private geotechnical engineer to perform continuous inspection work, and upon completion of the work to provide a written statement acknowledging that he has inspected the work and that in his professional judgment the work was performed in accordance with the approved plans and specifications. The permittee shall make his own contractual arrangements for such services and be responsible for payment of all costs. Continuous inspection by a geotechnical engineer shall include, but not be limited to, the following situations:

1. During the preparation of a site for the placement of fills which exceed five feet in depth on slopes which exceed ten percent and during the placing of such fills; however, for vehicular pathways, fill placement shall be continuously inspected when fills exceed ten feet in height;

2. During the preparations of a site for the placement of any fill and during the placement of such fill which is intended to support any building or structure;

3. During the installation of subsurface drainage facilities.

B. Reports filed by the private geotechnical engineer regarding special inspection shall state in writing that from his personal knowledge the work performed during the period covered by the report has been performed in substantial conformance with the approved plans and specifications.

C. The use of a private geotechnical engineer for inspections shall not preclude the director of public works from conducting inspections using his or other authorized inspectors as may be necessary. (Ord. 55 § 1.36, 1987)

**12.04.380 Noncompliance notification by private geotechnical engineer.**

The permittee shall cause the work to be done in accordance with the approved plans. If during the course of construction the private geotechnical engineer finds that the work is not being done substantially in accordance with the approved plans and specifications, he shall immediately notify the person in charge of the work and the director of public works of the nonconformity and the corrective measures to be taken. When changes in the plans are required, the permittee shall cause preparation of proposed changes and submit them to the director of public works for approval. (Ord. 55 § 1.37, 1987)

**12.04.390 Periodic progress reports by private geotechnical engineer.**

As a condition of the permit, periodic progress reports shall be rendered by the private geotechnical engineer as required by the director of public works including, but not limited to, laboratory tests, slope stability, placement of materials, retaining walls, drainage, utilities and any special permit or plan requirements. (Ord. 55 § 1.38, 1987)

**12.04.400 Progress report by permittee.**

Periodic progress reports shall be rendered by permittee on specified calendar dates and at commencement and completion of major key grading and erosion and sediment control operations. The dates of operations upon which such reports are required and their content shall be as required by the director of public works in the permit. (Ord. 55 § 1.39, 1987)

**12.04.410 Submit as-built plan.**

Permittee shall submit to the director of public works an as-built grading plan following completion of grading operations. (Ord. 55 § 1.40, 1987)

**12.04.420 Performance of work- Inspection.**

The director of public works may inspect any work done pursuant to a permit under this chapter. No permittee shall be deemed to have complied with this chapter until a final inspection of the work has been made by the director of public works and he has certified in writing that the work has been completed in accordance with all requirements and conditions of the permit. The permittee shall provide adequate access to the site for inspection by the director of public works during the performance of all work and for a minimum period of one year after acceptance by the director of public works of all improvements pursuant to other subsections herein. (Ord. 55 § 1.41, 1987)

**12.04.430 Other responsibilities of permittee.**

The permittee shall also be responsible for the following:

A. Protection of Utilities. The permittee shall be responsible for the prevention of damage to any public utilities or services.

B. Protection of Adjacent Property. The person(s) doing and causing the grading is responsible for the prevention of damage to adjacent property. No person(s) shall excavate on land sufficiently close to the property line to endanger any adjoining public street, sidewalk, alley or other public or private property, without supporting and protecting such property from damage which might result.

C. Advance Notice. The permittee shall notify the director of public works at least two working days prior to the start of work.

D. Erosion and Sediment Control. It shall be the responsibility of the permittee to prevent discharge of sediment from the site to any watercourse, drainage system, or adjacent property and to protect watercourses and adjacent properties from damage by erosion, flooding, or deposition of debris which may result from the permitted grading. Permittee shall implement all measures necessary to discharge this responsibility even if such measures exceed the requirements of an approved erosion and sediment control plan prepared pursuant to this chapter. Such measures include cleanup and sediment or debris leaving the site. (Ord. 55 § 1.42, 1987)

E. Work hours shall be 7:00 am to 5:00 pm. Monday thru Friday. No work shall occur before or after the time specified, or the Town may terminate the permit. No work on weekends or holidays unless approved in writing by the Town.

**ARTICLE VII. DESIGN STANDARDS**

**12.04.440 Excavation.**

Excavations shall be constructed or protected so that they do not endanger life of property. (Ord. 55 § 1.43, 1987)

**12.04.450      Excavation slope.**

The slope of cut surfaces of permanent excavations shall not be steeper than two horizontal to one vertical exclusive of terraces and exclusive of roundings described herein. Steeper slopes will be permitted in competent bedrock provided such slope inclinations are in accordance with recommendations contained in the geotechnical or geological report. The bedding planes or principal joint sets in any formation when dipping towards the cut face shall not be daylighted by the cut slope unless the soils and geologic investigations contain recommendations for steeper cut slopes. Cut slopes shall be rounded into the existing terrain to produce a contoured transition from cut face to natural ground. (Ord. 55 § 1.44, 1987)

**12.04.460      Fill placement.**

Fills shall be constructed in layers. The loose thickness of each layer of fill material before compaction shall not exceed eight inches. Completed fills shall be stable masses of well-integrated material bonded to adjacent materials and to the materials on which they rest. Fills shall be competent to support anticipated loads and be stable at the design slopes shown on the plans. Proper drainage and other appropriate measures shall be taken to ensure the continuing integrity of fills. Earth materials shall be used which have no more than minor amounts of organic substance and have no rock or similar irreducible material with a maximum dimension greater than twelve inches. (Ord. 55 § 1.45, 1987)

**12.04.470      Fill compaction.**

All fills shall be compacted throughout their full extent to a minimum of ninety percent of maximum density as determined by appropriate ASTM standard method or other alternate methods approved by the director of public works. Tests to determine the density of compacted fills shall be made on the basis of not less than one test for each two-foot vertical lift of the fill but not less than one test for each one thousand cubic yards of material placed. Additional density tests at a point approximately one foot below the fill slope surface shall be made on the basis of not less than one test for each one thousand square feet in slope surface but not less than one test for each ten-foot vertical increase of slope height. All tests shall be reasonably uniformly distributed within the fill or fill slope surface. Results of such testing and location of tests shall be presented in the periodic and final reports. Compaction may be less than ninety percent of maximum density, as determined by the above test, within three inches of the slope surface when such surface material is placed and compacted by a method acceptable to the director of public works for the planting of the slopes. Compaction of temporary storage fills, to be used for a period of not greater than six months, shall not be required, except where the director of public works determines that compaction is necessary as a safety measure to aid in preventing saturation, sliding, or erosion of the fill. (Ord. 55 § 1.46, 1987)

**12.04.480      Ground preparation for fill placement.**

The natural ground surface shall be prepared to receive fill by removing vegetation, noncomplying fill, top soil, and other unsuitable material, scarifying the resulting top six inches, and where existing slopes are five horizontal to one vertical or steeper, by benching into competent material in a manner acceptable to the director of public works. The keyway under the toe, if specified, shall be at least ten feet wide. (Ord. 55 § 1.47, 1987)

**12.04.490 Fill slopes.**

The slope of permanent fills shall not be steeper than two horizontal to one vertical exclusive of terraces and exclusive of roundings described herein. The director of public works may require that the fill be constructed with an exposed surface flatter than two horizontal to one vertical or may require such other measures as he deems necessary for stability and safety. (Ord. 55 § 1.48, 1987)

**12.04.500 Adjacent structures protection.**

Footings which may be affected by an excavation shall be underpinned or otherwise protected against settlement and shall be protected against lateral movement. Fills or other surcharge loads shall not be placed adjacent to any building or structure unless such building or structure is capable of withstanding the additional loads caused by such fill or surcharge. The rights of coterminous owners shall be as set forth in Section 832 of the Civil Code of the state of California. (Ord. 55 § 1.49, 1987)

**12.04.510 Setback-General.**

Unless otherwise recommended in a soil and geologic investigation report, Figures 70-1 and 70-2 on page 763 of the 1985 Uniform Building Code or said similar provisions as provided for in adopted successor codes shall be used for establishing setbacks for property boundaries, buildings and structures other than fences and retaining walls. (Ord. 55 § 1.50, 1987)

**12.04511 Special grading requirements.**

A. Rolling Terrain Grading - Grading of rolling terrain shall be accomplished in a manner whereby the effect of the rolling terrain is maintained as close to that which exists, to the extent practicable. Every effort shall be made to keep grading of rolling terrain to a minimum.

B. Boundary Grading - Special attention shall be given to grading adjacent to the exterior perimeter property line of a development. All adverse effects to off-site properties adjacent to new developments shall be kept to a minimum. Fills and cuts adjacent to the exterior perimeter property line shall be designed in accordance with the following:

1. When grading along existing residential property, the grade should be, if at all possible, held equal to or lower than the existing property grades. When grades are to be raised higher than existing adjacent residential lots, a masonry retaining wall shall be used, regardless of the difference in elevation. Existing drainage ways shall be maintained unless approved otherwise by director of public works. The

wall shall be located as close to the property line as is feasible for construction. If permission can be obtained from the adjacent property owner(s), the wall should be placed on the property line or onto the lower lot and the fence relocated to the top of the wall. Permission must also be obtained of neighbor to enter the property for construction purposes.

2. If possible, all exterior slopes, fill or cut, shall be constructed off-site, with the property line being situated a minimum of two feet inside the higher elevation. If a right of entry cannot be obtained for this, a retaining wall shall be placed as near to property line as practicable.

3. A right of entry shall be required for all off-site fills and grading prior to plan approval. (See Form GR-1)

4. Maximum slope shall be 2:1 or as specified by the Geotechnical Engineer.

5. All slopes steeper than 4:1 adjacent to the public right of way and private streets shall be protected with permanent erosion control measures.

6. All fill material shall achieve 90 percent relative compaction certified by a Registered Geotechnical Engineer.

7. When a drainage swale or ditch is proposed to run adjacent to the property line, a level area, minimum width of 5-feet, is required between the property line and the top of the slope bank.

8. A specific off project haul route shall be approved by the director of public works when over 750 cubic yards of imported or exported soil is required. Where a haul route has not been determined at the time of plan approval, the permit shall be conditioned stating that no grading activities shall occur until a haul route has been approved by the Town Engineer.

C. Interior Grading - Differences in elevations across interior property lines within a development, such that slopes or retaining walls are required, shall conform to the following:

1. Cross lot drainage is not allowed unless specifically approved by the director of public works for tree preservation. All single-family residential lots shall have Class 1 grading as per the Loomis Standard Details unless approved otherwise by the director of public works. When a Class 2 or Class 3 lot grading plan is proposed as part of a tentative map application for a single-family residential subdivision, the tentative grading plan showing rear lot drains shall be supplemented with an alternative plan showing the effect on the subdivision if rear lot drains are not utilized.

2. Retaining walls shall be required whenever adjacent side lot elevations differ by more than 1/2-foot. In such cases, a minimum 3-foot wide walk path shall be maintained adjacent to all side property lines. Where the design engineer feels that this path will be maintained without the use of a retaining wall, application for a waiver may be made by preparing and submitting a standard Sideyard Setback Guarantee. The Sideyard Setback Guarantee shall specify the lots for which a waiver of the retaining wall requirement is requested, the minimum setback of the proposed structure from the property line, and shall state that should the minimum setback not be possible during construction, a retaining wall shall be constructed to requirements of this chapter. Upon approval, a copy of these will be given to the Building Division and Planning Department to utilize in their review. Any deviation to these setbacks will be subject to approval by the Public Works and Planning Department.

3. Property lines shall be situated a minimum of 1.0 foot inside the top of fill or cut slopes when pad elevations differ by 1/2-foot or less. When retaining walls are used, the property lines shall be situated on the high side of the retaining wall with a minimum setback of 1.0 foot from the property line to the retaining wall. Where pad elevations differ by more than 1/2 foot and waiver of placement of retaining walls is requested per the requirements stated above, property lines shall be situated a minimum of 2.0 feet inside the top of fill or cut slopes.

4. The maximum earth slopes allowed shall be 2:1 (horizontal to vertical). Minimum asphalt concrete surface slopes shall be 1% and minimum concrete cement surface slopes shall be 0.4%. All proposed slopes that are 3:1 or steeper shall be shown on the plans by some type of slope symbol delineation.

5. Lots on the low side of streets at sag points shall have pad elevations a minimum of one foot above the 100-year water surface elevation assuming failure of all subsurface drainage systems.

D. Retaining Walls - Retaining walls, when required, shall be shown on the plans and shall include all necessary information and details for construction. All retaining walls adjacent to the public right of way or along the exterior boundary of the project shall be masonry. Other retaining walls less than or equal to 2'-6" in height may be redwood conforming to the Loomis Standard Details. Walls higher than 2'-6" shall be masonry. All walls higher than 4-feet as measured from base of foundation to top of wall shall be substantiated with structural calculations stamped by a Registered Civil Engineer and a building permit shall be obtained from the Building Division prior to Engineering approving the plans which reflect installation of the retaining walls.

E. Grading near Trees - Grading near trees shall follow the requirements of the Zoning Ordinance.

#### **12.04.520 Drainage-General.**

The drainage structures and devices required by this chapter shall be designed and constructed in accordance with standards herein and criteria authorized by the director of public works. (Ord. 55 §1.51, 1987)

**12.04.530 Drainage-Disposal requirements.**

All drainage facilities shall be designed to carry surface and subsurface waters to the nearest adequate street, storm drain, natural watercourse or other juncture, and shall be subject to the approval of the director of public works. Drainage areas shall conform to patterns established by the director of public works. (Ord. 55 § 1.52, 1987)

**12.04.540 Drainage-Water accumulation.**

All areas shall be graded and drained so that water will not pond or accumulate. Drainage shall be affected in such a manner that it will not cause erosion or endanger the stability of any cut or fill slope or any building or structure. (Ord. 55 §1.53, 1987)

**12.04.550 Drainage protection of adjoining property.**

~~When surface drainage is discharged onto any adjoining property, it shall be discharged in such a manner that it will not cause erosion or endanger any cut or fill slope or any building or structure. (Ord. 55 § 1.54, 1987)~~

Cross lot drainage is not allowed unless specifically approved by the director of public works for tree preservation or severe disruption to the existing ground elevation and surrounding area. All residential, commercial or industrial lots shall provide front lot drainage, unless approved otherwise by the director of public works.

**12.04.560 Terrace drainage.**

Terraces at least eight feet in width shall be established at not more than twenty-five feet in height intervals for all cut and fill slopes exceeding thirty feet in height. Where only one terrace is required, it shall be at approximately midheight. Suitable access shall be provided to permit cleaning and maintenance of terraces and terrace drains. Swales or ditches on terraces shall have a minimum depth of one foot, a minimum longitudinal grade of four percent, a maximum longitudinal grade of twelve percent. Downdrains or drainage outlets shall be provided at approximately three hundred foot intervals along the drainage terrace. Downdrains and drainage outlets shall be of approved materials and of adequate capacity to convey the intercepted waters to the point of disposal. If the drainage discharges onto natural ground, adequate erosion protection shall be provided. (Ord. 55 § 1.55, 1987)

**12.04.570 Subsurface drainage.**

Cut and fill slopes shall be provided with surface and/or subsurface drainage as necessary for slope stability and control groundwater seepage. (Ord. 55 § 1.56, 1987)

**12.04.580 Erosion and sediment control.**

The following shall apply to the control of erosion and sediment from grading operations:

A. Grading plans shall be designed with long term erosion and sediment control as a primary consideration.

B. Grading operations during the rainy season shall provide erosion and sediment control measures except upon a clear demonstration, to the satisfaction of the director of public works, that at no stage of the work will there be any substantial risk of sediment discharge from the site.

C. Should grading be permitted during the rainy season, the smallest practicable area of erodible land shall be exposed at any one time during grading operations and the time of exposure shall be minimized.

D. Natural features, including vegetation, terrain, watercourses and similar resources shall be preserved wherever possible. Limits of grading shall be clearly defined and marked to prevent damage by construction equipment.

E. Permanent vegetation and structures for erosion and sediment control shall be installed as soon as possible.

F. Adequate provision shall be made for long term maintenance of permanent erosion and sediment control structures and vegetation.

G. No topsoil shall be removed from the site unless otherwise approved by the director of public works. Topsoil overburden shall be stockpiled and redistributed within the graded area after rough grading to provide a suitable base for seeding and planting. Runoff from the stockpiled area shall be controlled to prevent erosion and resultant sedimentation of receiving water.

H. Runoff shall not be discharged from the site in quantities or at velocities substantially above those which occurred before grading except into drainage facilities whose design has been specifically approved by the director of public works.

I. Permittee shall take precautions to ensure that vehicles do not track or spill earth materials into public streets and shall immediately remove such materials if this occurs. (Ord. 55 § 1.57, 1987)

#### **12.04.590 Emergency conditions.**

Should sediment discharge occur or become imminent, permittee shall take all necessary steps to control such discharge. Such steps may include construction of additional facilities or removal or alteration of facilities required by approved erosion and sediment control plans. Facilities removed or altered shall be restored as soon as possible afterward or appropriate changes in the plan shall be immediately requested pursuant to this chapter. Permittee shall take prompt action to resolve emergency problems; otherwise the director of public works may institute abatement proceedings pursuant to the provisions of Section 12.04.640. (Ord. 55 § 1.58, 1987)

#### **12.04.600 Erosion and sediment control plans.**

Erosion and sediment control plans prepared pursuant to this chapter shall comply with the Town's Stormwater Management Plan and the California Stormwater Quality Association Stormwater Best Management Practice Handbooks and all of the following:

~~A. The erosion and sediment control plan need not be a separate sheet if all facilities and measures can be shown on the grading sheets without obscuring the clarity of either the grading plan or the erosion and sediment control plan.~~

~~B.~~ A. An erosion and sediment control plan shall be required whenever:

1. The graded portion of the site includes more than ten thousand square feet of area having a slope greater than ten percent;
2. There is significant risk that more than two thousand five hundred square feet will be unprotected or inadequately protected from erosion during any portion of the rainy season;
3. Grading will occur within seventy-five feet of the center of any watercourse; or
4. The director of public works determines that the grading will or may pose a significant erosion or sediment discharge hazard for any reason.

~~C. B.~~ The applicant shall submit, with his erosion and sediment control plans, a detailed cost estimate covering this work.

~~D. C.~~ Erosion and sediment control plans shall include an effective revegetation program to stabilize all disturbed areas which will not be otherwise protected. All such areas where grading has been completed between ~~April~~ May 1<sup>st</sup> and October 15<sup>th</sup> shall be planted by November 1<sup>st</sup>. Graded areas completed at other times of the year shall be planted within fifteen days. If revegetation is not feasible or cannot be expected to stabilize an erodible area with assurance during any part of the rainy season and the unstable area exceeds two thousand five hundred square feet, additional erosion and sediment control measures or irrigation of planted slopes may be required as appropriate to prevent increased sediment discharge.

The following is a list of general notes that shall be placed on sedimentation and erosion control plans as erosion and sedimentation control measures.

- a. All erosion and sediment control measures shall be implemented by October 1<sup>st</sup> or as approved by the Town Engineer and specified on the grading plans.
- b. Straw bales shall be stockpiled on site at a rate of 1.5 bales per acre by September 25. Measures shall be provided to keep straw dry.
- c. All slopes greater than 10:1 shall be covered with broadcast straw at a rate of 50 bales or 4000 pounds per acre. For slopes 4:1 or steeper, straw shall be pressed in place. Other methods are subject to approval of the Town Engineer.
- d. Slopes steeper than 4:1 and adjacent to Town right of way, flood plains, natural drainages, parkland or designated open space shall be hydroseeded.
- e. All bare areas, regardless of slope, within 50 feet of natural drainages shall be covered with straw and pressed in place.
- f. Where required, broadcast seed shall be applied at a minimum as follows:

<u>Blando Brome</u>	<u>12 lbs/acre</u>
<u>Rose Clover</u>	<u>9 lbs/acre</u>

Areas with sandy, dry soil shall be:

Zorro Annual Fescue 6 lbs/acre

Rose Clover 9 lbs/acre

16-20-0 fertilizer or equivalent shall be applied at a rate of 500 pounds per acre. If hydroseeding/mulching is used, seed quantities shall be increased by 30 percent.

g. No grading or trenching, except as required for erosion or sediment control, shall occur within 35 feet from the centerline of perennial and intermittent drainage swales between October 1 and April 1 except as approved by the Department of Fish and Game.

h. All erosion and sediment control measures shall be checked following all storms to ensure that all measures are functioning properly.

i. Sediment and trash accumulated in drainages or detention basins shall be removed as soon as possible. In addition, oil and material floating on water surface must be skimmed weekly and the debris properly disposed of.

j. Construction activities occurring between October 1<sup>st</sup> and May 1<sup>st</sup> shall have erosion and sediment control measures in place or capable of being placed within 24 hours. The contractor shall ensure that the construction site is prepared prior to the onset of any storm.

k. The contractor shall establish a specific site within the development for maintenance and storage of equipment or any other activity that may adversely contribute to the water quality of the runoff. This area shall have a berm located around its perimeter. This area shall be restored to acceptable condition upon completion of project.

l. Hydroseeding may be considered as an alternative to broadcast straw subject to the Public Works Department based on a review of the existing site conditions (location, slopes, proximity to streams) and time of year.

E. Erosion and sediment control plans shall be designed to prevent discharge of sediment at all stages of grading and development from initial disturbance of the ground to project completion. Every feasible effort shall be made to ensure that site stabilization is permanent. Plans shall indicate the implementation period and the stage of construction where applicable.

F. Erosion and sediment control plans shall comply with the recommendations of any civil engineer, geotechnical engineer, engineering geologist, or landscape architect involved in preparation of the grading plans.

G. The structural and hydraulic adequacy of all stormwater containment or conveyance facilities shown on the erosion and sediment control plans shall be verified by a civil engineer, and he shall so attest on the plans. Sufficient calculations and supporting material to demonstrate such adequacy shall accompany the plans when submitted.

H. Erosion and sediment control plans shall be designed to meet anticipated field conditions.

I. Erosion and sediment control plans shall provide for inspection and repair of all erosion and sediment control facilities at the close of each working day during the rainy season and for specific sediment cleanout and vegetation maintenance criteria.

J. Erosion and sediment control plans shall comply with any and all standards and specifications adopted herein for the control of erosion and sedimentation on grading sites. (Ord. 55 § 1.59, 1987)

K. Mitigation Monitoring Requirement - All mitigation measures and mitigation monitoring measures as required to mitigate environmental impacts shall be complied with. The developer is responsible for monitoring all mitigation measures and shall submit to the Planning and Public Works Department a letter certifying compliance with such measures prior to beginning any construction. For projects over 1 acre, a copy of the Storm Water Pollution Prevention Plan shall be available at the project site.

#### **12.04.610 Vehicular ways-General.**

Vehicular ways shall conform to the grading requirements of this chapter. (Ord. 55 § 1.59, 1987)

#### **12.04.620 Vehicular ways-Drainage.**

Vehicular ways shall be graded and drained in such a manner that will not allow erosion or endanger the stability of any adjacent slope. Grading shall not adversely affect the flow and surface water. Surface discharge onto adjoining property shall be controlled in such a manner that it does not cause erosion or endanger existing improvements. Bridges and culverts installed in watercourses shall be approved by the Placer County flood control and water conservation district. (Ord. 55 § 1.61, 1987)

#### **12.04.621 Dust Control.**

Dust control shall follow the latest version of the Fugitive Dust Control Measures (Rule 228) provided by the Placer County Air Pollution Control District.

### **ARTICLE VIII. PERFORMANCE SECURITY**

#### **12.04.630 Performance security required.**

A. As a condition to the issuance of a permit, and upon finding that the town's health, safety and welfare warrant such, the director of public works may require the execution of a covenant to deposit security and the deposit of improvement security in a reasonable amount to assure faithful performance of the secured work in the event of

default. Such security shall, as required by law or otherwise at the town's option, be in the form of cash, a certified or cashier's check, or a faithful performance bond executed by the applicant and a corporate surety authorized to do business in the state. The improvement security shall remain in effect until final inspections have been made and all grading, and in the case of subdivisions also all subdivisions improvements, have been approved by the director of public works.

B. In addition to the improvement security, the director of public works may also require, upon finding that the town's health, safety and welfare warrant such, the execution of a covenant to deposit security and the deposit of maintenance security a reasonable amount to guarantee and maintain the secured obligations (e.g., to assure the integrity of the grading systems and the provision of adequate erosion and sedimentation control). Such maintenance security shall, as required by law or otherwise at the option of the town, be in the form of cash, a certified or cashier's check, a letter of credit, or a faithful performance bond executed by the applicant and a corporate surety authorized to do business in this state, and the maintenance security shall remain in effect for a period of one year after the date of expiration of the related improvement security as designated in the covenant to deposit security and subsection A of this section.

C. Any bond or deposit required by the director of public works pursuant to this chapter shall be payable to the town.

D. Upon satisfaction of all applicable provisions of this chapter, the improvement and maintenance security deposits or bonds required of the permittee will be released. However, upon failure to perform any condition or obligation secured thereby (e.g., failure to complete the secured work or to comply with all the terms of the permit, or failure to assure the completed site to functions properly, to provide proper drainage or erosion or sedimentation control), the town may do the required work, or cause it to be done and collect from the permittee or surety all costs incurred thereto, including engineering, legal, administrative and inspection costs. Any unused portion of a deposit or bond shall be refunded to the permittee after deduction of the cost of the work, except that, to the extent the public works director can demonstrate to the satisfaction of the town manager that the permittee willfully breached an obligation in a manner that he knew or should have known would create irreparable harm to the town, the entire amount of the bond or deposit may be withheld. The town manager's determination may be appealed to the town council by the permittee by filing an appeal with the town clerk within ten days after the decision.

E. In the event it is necessary for the town to enforce the provisions of the covenant to deposit security or the security, the permittee, and surety in the case of a bond, shall pay to the town such reasonable attorney's fees as are incurred by the town. (Ord. 190, 1999; Ord. 55 § 1.62, 1987)

#### ARTICLE IX. ENFORCEMENT

##### **12.04.640 Suspension and revocation of permit.**

The director of public works may suspend or revoke a permit for good cause, subject to appeal to the town council. However, no work shall be performed pending appeal except as authorized by the director of public works. (Ord. 55 § 1.63, 1987)

##### **12.04.650 Corrective work.**

A. Abatement of Unlawfully Created Conditions.

1. Either the council or the director may order town crews or authorize contractors to enter private property to immediately abate a hazardous public nuisance.

Whenever the following conditions are created by violation of this chapter, they are declared to be in the category of hazardous public nuisance:

a. Where a violation has altered natural drainage patterns and has caused flooding to any downstream property; or

b. When a violation results in a condition which creates a drainage alteration such that downstream property may be flooded when weather conditions change and the owner, lessee or licensee of the property on which the violation exists cannot be found; or

c. Whenever a violation results in a hazard, requiring immediate correction for the preservation of the public health, safety or welfare.

2. Whenever the town expends any funds or takes any action, the town shall bill the landowner, lessee or licensee for the costs indicated herein. The costs shall become a lien on the property upon the bill being recorded in the office of the Placer County recorder. The following costs shall be included:

a. Engineering and design;

b. Legal;

c. Contractor service bills or public employee wages at cost;

d. Administration overhead and supervision based on ten percent of all other costs incurred; and

e. Interest shall accrue and be billed at the rate of one percent per month of all unpaid amounts beginning thirty days after the date of billing.

B. Stop Work Notice.

1. Whenever it comes to the attention of the director that any person is performing work in violation of the provisions of this chapter or without a permit as required by this chapter, the director may serve upon such person and property owner (if different) a written order citing such violations and directing that person performing the work to stop work immediately.

2. Upon receipt of such stop work notice the person performing the work shall:

a. Stop work immediately; and

b. Within twenty-four hours provide the director with a list of remedies which can be immediately undertaken to bring the work into compliance with the chapter; and

c. Within twenty-four hours after acceptance of such remedies by the director undertake, at the violator's expense, such action as is necessary to bring the work into compliance with this chapter;

d. Upon failure of any person to comply with the stop work notice served pursuant to this section, the department may perform the corrective work either with town crews or by contract. All persons responsible (Contractor and Property Owner) for the violation shall be liable jointly and severally to the town for the cost of such corrective work. The property owner is the ultimate responsible party and shall be accountable for any and all problems associated with their work or hired contractor work on the property;

e. If engineering work is required to identify and define the proper course of actions, as determined by the department of public works, such work shall be provided by

the violator or ultimately the property owner at no cost to the town. (Ord. 55 § 1.64, 1987)

**12.04.660 Nonexclusive remedies.**

The remedies provided herein are not exclusive, and are in addition to any other remedy or penalty by law. (Ord. 55 § 1.66, 1987)

ARTICLE X. ADDITIONAL  
PROVISIONS

**12.04.670 Enforcement official.**

The director of public works shall enforce the provisions of this chapter. (Ord. 55 § 1.67, 1987)

**12.04.680 Right of entry.**

Whenever necessary to enforce the provisions of this chapter the director of public works may enter the premises at all reasonable times in the manner provided by law to perform any duty imposed by this chapter. If such entry is refused, the director of public works shall have recourse to every remedy provided by law to secure entry. (Ord. 55 § 1.68, 1987)

**12.04.690 Stop work orders.**

Whenever any work is being done contrary to the provisions of this chapter or any other applicable law, ordinance, rule or regulation, the director of public works may order the work stopped by serving written notice on any persons engaged in, doing, or causing such work to be done. Any such person shall forthwith stop such work until authorized by the director of public works to proceed with the work. If there are no persons present on the premises, the notice may be posted in a conspicuous place. The notice shall state the nature of the violation. Any person violating a stop work order shall be guilty of a misdemeanor. (Ord. 55 § 1.69, 1987)

**12.04.700 Liability.**

Neither issuance of a permit under the provisions of this chapter nor compliance with the provisions hereof or with any conditions imposed in a permit issued hereunder shall relieve any person from responsibility for damage to any person or property or impose any liability upon the town for damage to any person or property. (Ord. 55 § 1.70, 1987)

**12.04.710 Denial of other permits.**

No building permit, septic, water, sewer, electrical permit, or any other permit shall be issued by the town to any person for any premises or portion thereof which is in violation of this chapter and which violation is not corrected or approved for correction by the director of public works. (Ord. 55 § 1.71, 1987)

**12.04.720 Notice to adjacent owners.**

Upon the filing of an application for a permit, the director of public works may notify by mail the owners of property abutting the site, as shown on the latest equalized assessment roll, that an application for a grading permit has been submitted pursuant to this chapter, that they comment at any stage of the procedure, and may lodge an appeal pursuant to the provisions of this chapter. (Ord. 55 § 1.72, 1987)

## SECTION 13

### ELECTRICAL AND STREET LIGHT DESIGN STANDARDS

- 13-1 **GENERAL** -- All street lighting systems shall be constructed in accordance with requirements of these improvement standards as recommended by the manufacturer, or as directed by the Utility Agency. The manufacturer's guidelines shall be available at the construction site at all times.
- 13-2 **STREET DESIGN STANDARDS** -- Street lighting shall be designed in conformance with the information contained herein, the current edition of the Town of Loomis Land Development Standards and Construction Standards, and the American National Standard Practice for Roadway Lighting of the American Standards Institute. Data and calculations supporting the satisfaction of the above requirements shall be submitted for review, or the predetermined design standard included herein shall apply. The Town shall approve pole style and location. The Local Utility Company shall process the service design of the street light.
- 13-3 **STREET LIGHTS REQUIRED** -- Street lights shall be required for all lots and parcels being developed or constructed upon. In addition, streetlights may be required for lots and parcels containing existing structures which are being improved or altered, depending on the nature and extent of the work.
- 13-4 **DEVELOPER'S RESPONSIBILITY** -- Existing streetlights, which must be relocated or repositioned, as a result of the construction of new streets or driveways into a development shall be the responsibility of the developer.
- The Developer shall also be responsible for coordinating all street light plan review, fee submittal and inspection with the Local Utility Company.
- 13-5 **UTILITY COMPANY AUTHORIZATION** -- A written notice from the serving utility company stating that line clearances and service have been checked and are adequate shall be submitted to the Town Engineer for all developments.
- 13-6 **STREET LIGHT DESIGN DETAILS** -- Design details for streetlights are as follows:
- A. **Intersection** -- Intersections shall have at least one street light. Intersection street light locations and the number required shall conform to Standard Details SL-1 and SL-2.
  - B. **Cul-de-sacs** -- All cul-de-sacs exceeding 130 feet in length measured from the street light locations at the intersection to the right-of-way line at the end of the cul-de-sac shall have a street light within the bulb.
  - C. **Spacing** -- Maximum street light spacing measured along the street centerline shall conform to the design.

- D. **Street Light Poles** -- All streetlight poles shall be of galvanized steel, aluminum, or concrete except as provided for by Item "F" below. All pole construction and materials shall conform to the Standards outlined below and the Standard Details contained therein. Poles shall be identified on the plans by construction material, luminaires mounting height, pole dimensions, and by length of mast arm.

The Town may approve special or unique designs if the character of the surrounding neighborhood warrants unique design. Where special or unique design street light poles not specified in these Standards are to be used, the developer shall supply to the Town additional poles to be used for future pole replacement. The minimum number of replacement poles to be supplied to the Town shall be 10% of the poles being installed with any fractional percent being rounded to the next whole number.

The position of the street light poles shall conform to Standard Detail SL-1 & SL-2.

- E. **Luminaires** -- The type of street light and the appropriate wattage shall be specified on the plans. The luminaires shall be high pressure sodium type with internal ballasts.
- F. **Service** -- All street light systems shall have underground service provided. Service points shall be provided within a utility easement immediately adjacent to or within the right-of-way and shall be open and easily accessible to the street frontage.
- G. **Pullboxes** -- All pullboxes, including the size, shall be shown and identified on the plans. Pullboxes shall be installed at the locations where more than two conduit runs intersect, where conduit runs are more than 250 feet long, where shown on Standard Details, at critical angle points, behind each light or at such locations ordered by the Town Engineer. Normally a No. 3-1/2 pullbox will be allowed when three conduits or less are involved. For all other situations, a No. 5 or No. 6 pullbox shall be specified.
- H. **Photo Cell** -- A single photo cell receptacle shall be provided on the luminaire nearest to the service point for multiple service containing four or more lights. All other light systems shall have a photocell in each luminaire.

13-7 **MASTER PLANNING** -- The purpose for master planning is to end up with an overall uniform street light system meeting minimum requirements. On 74 foot or wider streets, master planning shall apply to only one side of the street. On all other streets, master planning shall apply to both sides of the street. The procedure for master planning is outlined as follows:

- A. Determine the nearest intersections each way from the street light locations required. Determine the location of the streetlights at the intersections in conformance with these design standards.

- B. Determine the existence of any streetlights situated between the adjacent intersections above.
- C. Determine the distance between the adjacent designed intersection street lights above and/or adjacent to existing street lights, whichever are nearest to the street light locations being determined.
- D. Divide the distance into the most possible equal spaces between lights that can be obtained in conformance with the spacing requirements herein.
- E. Compare the light locations to intersecting property lines, driveways, pedestrian lanes, and utility obstructions as follows:
  - 1. If the location falls close to a property line and the street light location can be adjusted to the property line while staying within the maximum spacing allowed, then the adjustment should be made.
  - 2. Generally, streetlights should be situated at intersecting property lines for residential lots and parcel with minimal frontage (75 feet or less). The light spacing may have to be unbalanced with additional lights being added to attain this and still comply with the maximum spacing allowed.
  - 3. Street light locations shall be adjusted to avoid driveways and existing utility obstructions by five feet.
- F. Where utility owned poles with overhead lines are existing, the serving utility company shall be contacted to determine if the streetlights can be installed upon the poles.



## SECTION 14

### EXISTING UTILITIES

- 14-1 **SCOPE** – The purpose of this section is to assist in the gathering and interpretation of information concerning the location of existing utilities, both above and below ground, that affect the design and preparation of plans for public and private improvements.

Such public and private improvements include the installation of storm drain lines, sanitary sewer lines, water mains, gas, electrical, CATV, telecommunications and new streets. Also included is the widening of existing streets, construction of bridges, pump stations, open channels, and the installation of traffic signals and street lighting systems.

The guidelines contained herein are intended to help the design engineer either avoid conflicts in alignment and elevation or resolve conflicts in alignment and elevation that often occur between proposed public improvements and existing utilities.

This section covers only the technical aspects of avoiding or resolving conflicts with existing utilities. The handling of utility conflicts with regard to prior rights, financial responsibility for relocation of existing utilities, etc., is beyond the scope of this section.

- 14-2 **BACKGROUND** – The avoidance or resolution of conflicts between proposed public improvements and existing utilities, particularly underground utilities, is a crucial part of the design process. Research concerning the location of existing utilities, careful planning, and close attention to detail are useful tools in determining the degree of impact that existing utilities will have on the horizontal and vertical alignment of proposed water mains, storm drain lines, and sanitary sewer lines. The location of above and below ground utilities may also affect the design of the geometric alignment of streets as well as the alignment and typical cross section of open drainage channels.

Information of the type, location, alignment, length, height and depth of existing public, municipal, and privately owned utilities may be obtained from the owner of the utility. The information comes in the form of maps, plans, drawings, and other records kept by the utility's owner as well as public improvement plans for past projects. In addition, field trips to the site of a proposed public improvement project and the performance of field investigations such as "potholing" provide accurate first hand knowledge of the location of existing utilities.

- 14-3 **TYPES OF UTILITIES** – Utilities may be classified according to ownership (public or private) and location (overhead or underground).

- A. **Above Ground (Overhead) Utilities** – Common overhead public utility lines include electrical power (Pacific Gas and Electric Company, etc.), and communication such as telephone (American Telephone and Telegraph, Pacific Bell, etc.), cable TV.
- B. **Underground Utilities** – Underground public utilities include electrical power in the form of duct banks (stacked ducts made of or encased in concrete) or direct burial cable (Pacific Gas & Electric). Communication lines may also be placed underground in the form of duct banks or buried insulated cable (Pacific Bell, Sacramento Cable, etc.). Natural gas pipelines (Pacific Gas and Electric) are generally underground. At stream crossings, however, natural gas lines may be mounted on bridges.
- C. **Municipal Utilities** – Municipal utilities serving urban and suburban areas are also included in the category of public utilities. Examples of underground municipal utilities

include storm drain and sanitary sewer lines, both gravity and pressure (force mains), water transmission and water distribution mains.

- D. **Privately Owned Utilities** – Privately owned utility lines include pipelines used to transmit petroleum products such as lines owned by Union Pacific Transportation Company, Chevron Corporation, or Unocal Corporation. In addition, manufacturing companies may have their own pipelines for transmitting natural gas or other gases to their plants for their own use.

Railroads often have pole lines within the rights-of-way running parallel to their tracks that support overhead wires for operation of switches, gates at grade crossings, signals, communication and other operational equipment.

- 14-4 **FIELD VISITS TO PROJECT SITES** – Knowing what to look for when visiting project sites in the field can provide considerable insight as to the potential impact existing utilities and related facilities may have on a proposed public improvement project.

A. **Electrical Power (Overhead and Underground)**

**Overhead Electrical Power** – Overhead facilities for the distribution of electrical power are rather obvious in the field and include poles (mostly wood but sometimes steel), conductors (wires and cables), pole mounted transformers, guy wires and anchors, etc. Most power pole lines are placed within street right-of-way, although they may also be located in easements.

High voltage transmission lines supported on tall steel poles as well as lattice towers are also a type of overhead facility used for the distribution of electrical power. Many of these high voltage transmission lines run through one part of town to another within their own easements.

The wooden power pole with supported wires and related hardware is the most common type of overhead electrical power distribution facility normally encountered in the field. Besides ordinary line poles, however, certain other types of poles are frequently encountered in the field.

**Joint Poles** – Power poles supporting telephone lines are often referred to as joint poles. Joint use power poles may also be supporting lines for fire alarm and cable TV in addition to overhead electrical and telephone lines.

**Power Mounted Risers** – Some power poles have conduit risers strapped to the pole that originate near the top of the pole, run down the side, and continue underground. The conduit risers contain electrical wires or cables that connect to a pole mounted transformer or to power lines supported by the pole and extend underground to electrical service panels of buildings, ground mounted transformers, service pedestals for street lighting and traffic signal systems, etc.

**Pole Mounted Transformers** – Power poles may have one or more electrical transformers mounted near the tops of the poles.

**Switch Poles** – Certain poles, designated as switch poles, may have manually operated throw switches situated near the tops of the pole. Switch poles may be recognized by the presence of a lever position 10 or 12 feet above ground level connected by galvanized steel bar linkage to the switch at the top of the pole. There may also be a steel grounding plate located at ground level near the base of the pole below beneath the switch operating handle.

**Dead End Poles and Guyed Poles** – Poles located at the termination of overhead electrical power lines are dead end poles and are restrained by guy wires. The guyed poles resist the horizontal thrust (pull) exerted by the electrical power lines supported on a run of line poles. Guy wires are also used to stabilize individual poles placed at angle points in the alignment of a pole line.

A type of dead end pole may also be placed at intervals along a series of line poles. Although the power lines supported by this type of dead end pole extended away from the pole in opposite directions, the power lines may actually terminate at the pole. Electrical continuity is provided by a form of jumper wire that connects the opposing ends of the individual power lines terminating on each side of the pole. This type of dead end pole is not guyed as the horizontal pull exerted by the power line cancel out.

The positioning of the ceramic insulators on the wooden cross arms of power poles is a clue in the identification of any type of dead end pole (besides the presence of a guy wire). The insulators of ordinary line poles are mounted on the top of the wooden cross arms whereas the insulators for dead end poles are mounted on the sides of the cross arms. The positioning of the insulators is directly related to the need to resist the horizontal pull of the power lines supported by the poles.

**Relocation of Power Poles** – The existence of any of the various types of power poles may affect how readily and expeditiously the poles will be relocated if the existing location of other poles is determined to be in the way of a proposed public improvement project. There may be a cost to a project for any existing poles incorrectly relocated or if the existing poles are situated within their own easement lying outside the original public right-of-way. In addition, certain pole lines may support conductors carrying high voltage electricity that can only be shutdown at specific times of low demand such as during weekends or holidays.

- B. Underground Electrical Powers** – Underground electrical distribution facilities include direct burial insulated cables as well as uninsulated grounding cables. Along streets in new subdivisions these cables are most often placed within the 12.5 foot wide public utility easement located behind the street right-of-way line.

In certain areas, underground electrical power lines are placed within stacked multiple duct banks. Underground vaults are placed at electrical service points and junctions of these duct banks. These underground vaults may be found in the street within the traveled way or they may also be found within the sidewalk area.

As mentioned previously, power poles may support conduit risers extending the full height of the pole and continuing underground. Poles with conduit risers can be readily seen in the field. The direction and/or length of the underground portion of the conduit may or may not be so obvious but they may interfere with the placement of shallow municipal utility lines such as water and sewer services as well as leads from drainage inlets. The alignment and depth of such underground lines can only be accurately determined by "potholing."

- C. Telephone (Overhead and Underground)**

**Overhead Telephone** – Overhead telephone lines often share the same poles as electrical power lines and are referred to as joint poles as mentioned previously. The telephone lines are mounted several feet below the electrical power lines. Poles supporting both power and telephone lines are usually owned by PG&E. Certain pole lines may be carrying telephone lines only, in which case they are owned by Pacific Bell or possibly American Telephone and Telegraph.

Conduit risers for underground telephone service lines may also be mounted on telephone poles. The depth and/or alignment of the underground portion of the conduit riser may interfere with the placement of shallow municipal utility lines such as water and sewer services as well as leads from drainage inlets.

**Underground Telephone** – Underground telephone facilities consist of direct burial insulated cable as well as single or multiple duct banks. The buried cables are not usually encased in concrete while the ducts, there are several in number, usually are encased in concrete. Telephone ducts installed in the recent past are plastic and are often 4 inches in diameter. Older duct banks may consist of precast concrete units made with tubular voids that when placed end to end form continuous underground enclosed conduits.

When telephone ducts are encased in concrete they are usually grouped or stacked to form a duct bank. The pattern of the ducts within the duct bank is generally in the form of columns and rows and may be two or three ducts wide and two to six or more ducts deep.

Concrete encased duct banks can present a somewhat impenetrable barrier to the desired placement of storm drain lines and sanitary sewer lines. Although the telephone company (Pacific Bell) may have fairly accurate records on the size, number, and possibly the arrangement of the ducts making up a particular duct bank, the actual depth of cover and the extent or thickness (top and bottom elevation) of this type of underground telephone facility is best determined by "potholing."

The buried cables and the duct banks often pass through, join other cables and duct banks from different directions, or terminate at telephone manholes. Telephone manholes may appear innocuous when viewing the distinctive manhole covers on the ground or pavement surface. In reality, telephone manholes may be sizeable underground vaults that could very well interfere with the placement of storm drain lines, drain inlet leads, sanitary sewer lines, sewer services, and water mains as well as water services.

Should a grade conflict occur at a crossing of a proposed storm drain line or sanitary sewer line with an existing underground telephone duct bank and the slope of the drain or sewer line is critical, in some instances, it may be possible for the existing telephone facility to be splayed into two separate (upper and lower) parts. This will allow the drain or sewer line to pass between the divided duct bank while maintaining the desired vertical alignment.

Splaying involves the excavation and exposure of a suitable length of the existing duct bank in each direction from the location of the conflict to gain slack. This is followed by separating the ducts apart far enough to create an opening large enough for the sewer or drain pipe to pass through. The splaying of an underground telephone duct bank is an expensive and time consuming solution to a grade conflict and should only be used if there is no other vertical alignment option for the proposed drain line or sewer line.

Other telephone facilities observed in the field are pedestals mounted at ground level or on telephone poles. The pedestals are fabricated from sheet metal and are generally painted a light green in color. The pedestals often contain terminal boards and no doubt indicate the presence of underground telephone facilities.

Worded signs warning of the existence of underground telephone facilities are often seen spaced at intervals along the alignment of underground cables and duct banks.

- D. **Natural Gas (Underground)** – Generally natural gas mains and gas service lines are installed underground. At stream crossings gas lines may be mounted on the superstructure of bridges constructed across the water course.

Gas meters are mounted above the ground near the point where the gas service line enters the customer's premises and thus are clues of the presence and location of underground gas services.

At railroad grade crossings of town streets, any gas mains crossing beneath the tracks are placed inside steel pipe casings. All pipe casings for gas mains are required to be vented at one or both ends by 1-1/2 or 2-inch diameter steel pipes routed to one side of the street somewhat opposite the ends of the casing. The existence of casing vent pipes at railroad grade crossings is a clue of the presence of an underground gas main extending under the track(s) and beyond.

- 14-5 **UNDERGROUND SERVICE ALERT (USA) COLOR CODE** – Contractors are required to have the location of all underground utilities marked on the ground within the limits of any excavation prior to beginning the excavation. The alignment and size, if appropriate, of the underground utilities are marked on the ground or pavement surface in a specific color according to the type of utility. The standardized color code used to mark and identify the location of existing utilities in the field is as follows:

RED	Underground electrical power lines in the form of ducts (concrete encased or non-encased), cables, or conduits. Also includes conduits for traffic signal and street lighting systems.
YELLOW	Natural gas mains and services as well as pipelines carrying petroleum products.
ORANGE	Underground telephone and other communication, fire alarm, railroad signal, telegraph, etc., lines in the form of ducts (encased and non-encased), cables, and conduits.
BLUE	Water mains and water services as well as landscape irrigation lines.
GREEN	Sanitary sewer lines and sewer services as well as storm drain lines.

The markings made in the field by the representatives of the owner of the underground utility indicate only the approximate location of the underground facility. The markings do not signify the exact location but only indicate the particular underground utility is located somewhere within a strip of land not more than 2 feet on either side of the exterior surface of the underground installation. Information on the depth of an existing utility is normally not given, only location and alignment.

- 14-6 **UTILITY INFORMATION AND NOTIFICATION** – It is important to obtain accurate and factual information concerning the location of existing aerial and underground utilities early in the design process.

For private development projects, the design professional shall demonstrate their coordination with public/private utilities and submit certification that this coordination has been accomplished.

In the preparation of construction plans, the various utility companies are to be notified in writing according to the following procedure:

- A Letter** Send a minimum of six months in advance of the anticipated bid date for the project. It is beneficial to send this letter as soon as preliminary design is complete.

Provide information on location and limits of project, scope or description of the work, etc. Include vicinity map, typical sections, right-of-way requirements, and if available preliminary plans with survey notes plotted.

**B Letter** Send at time of advertising project for bids.

Copies of complete plans that have been signed are sent with this letter. Include date bids are to be received and date construction is expected to begin.

Blank copies of these utility notification letters are included as Exhibits at the end of this section.

For many projects the sending of the two standard notification letters may need to be supplemented with visits to the field, "potholing," telephone calls, and the arrangement of meetings with utility company representatives. This is to insure that any required relocation of existing utilities not to be performed by the contractor will be completed in a manner that will not delay a contractor constructing a project. This is especially important for large projects where utility relocations may be numerous and time consuming.

Early receipt and thorough analysis of utility information (size, alignment, depth, etc.) as related to the design and construction of new public improvements should greatly reduce the number of change orders, construction delays, and contractor claims resulting from conflicts with existing utilities encountered in the field.

As part of the design work for a public improvement project, an effort should be made to identify, locate (by "potholing" if necessary), and arrange a time schedule for the relocation of existing utilities found to be in conflict with any proposed improvement elements.

#### **14-7 CLEARANCES TO EXISTING UTILITIES**

**A. Excavating Near Power or Telephone Poles** – In streets improved with curbs, gutters, and sidewalks, power poles and telephone poles are placed at the back of curb in the sidewalk or planter area. In paved streets that lack curbs, gutters, and sidewalks, the poles are generally placed a few feet inside the street right-of-way line but behind any drainage swales or roadside ditches. In easements, such as along the rear lot lines of residential subdivisions or along drainage channels, power poles are usually placed inside the easement right-of-way line far enough for the crossarms to remain within the easement.

May public improvement projects, particularly street widening projects, may involve the installation of municipal utilities (storm drain lines, sanitary sewer lines, and water mains) in close proximity to existing power or telephone poles. Existing power and/or telephone poles may need to be set back if the street widening project includes the acquisition of additional right-of-way. However, until the additional right-of-way is acquired and the poles relocated to their ultimate position, the current location of the poles may greatly influence, if not completely dictate, the placement of the proposed drain lines, sewer lines, or water mains.

In determining the placement of drain lines, sewer lines, or water mains relative to fences, channel banks, power poles, telephone poles, street lights, traffic signal standards, etc., consideration should be given to the working space needs of excavating equipment used to install the drain lines, sewer lines, or water mains.

Large capacity trench excavating equipment may have a side overhang of approximately 7 feet measured from the centerline of the trench. The space needs of the excavating equipment may be also governed by the minimum horizontal and vertical clearances to

overhead wires. In general, the deeper or wider a pipe trench is, the larger will be the size of the machine used to excavate the trench and the farther the pipeline will need to be from a line of poles or other fixed objects.

Descriptive literature giving the dimensions and working space needs of specific models of excavators from various manufacturers (Caterpillar Co., Deere and Co., etc.) is available upon request from dealers of such equipment.

Existing power or telephone poles may need to be braced if the stability of the poles is threatened by the excavation of a trench nearby. The work of bracing of the poles is performed by the utility company owning the poles (Pacific Bell). For some types of projects (usually privately funded ones) the utility company may charge for the cost of bracing the poles.

Situations occur where the horizontal and/or vertical clearances between the bucket and boom of an excavator and the energized overhead wires of a power pole line may be less than safety standards allow. If an existing electrical power line cannot be temporarily shutdown (de-energized) for a long enough period of time to complete the excavation of a trench and installation of pipe, a temporary power pole line or "shoofly" may need to be installed parallel to but some distance from the existing pole line.

Following completion of installation of a "shoofly" the existing power line between the limits of the "shoofly" is de-energized thus allowing the safe use of excavating equipment. Any customers normally served from the de-energized overhead line are temporarily connected to the energized "shoofly."

- B. Horizontal and Vertical Clearances to Underground Utilities** – If at all possible, water mains are to be placed to provide 10 feet of horizontal clearance from parallel sanitary sewer lines. A minimum of one foot of vertical clearance shall be provided between water mains and gravity sewer lines at all transverse crossings. Water mains shall be installed a minimum of 2 feet above sanitary sewer force mains at all transverse crossings. In addition, water mains shall cross over rather than under sanitary sewer lines unless the depth of cover over the water main dictates otherwise.

A minimum of 6 inches of vertical clearance shall be provided between water mains and storm drain lines and other non-sanitary utility lines.

All new, relocated, or replacement water distribution mains as well as small to medium size sewer or drain lines (12 to 18 inches in diameter) shall be placed at least 5 feet, centerline to centerline, from such underground utility lines as gas mains and electrical or telephone cables and ducts, provided the existing underground facilities are not too large (wide).

In areas where the clearances between existing and proposed facilities is extremely limited, new or replacement drain lines, sewer lines, or water mains may be placed such that no portion of the substructure of an existing underground utility is closer than two feet to the trench wall of the new or replacement facility.

Long skew crossing of proposed storm drain lines, sanitary sewer lines, or water mains over and especially under of underground existing utility lines should be avoided if at all possible. Such crossings are very costly to construct due to the amount of difficult excavation and tunneling required (usually by hand) and the need to provide special support for the portion of the existing utility that is exposed.

**14-8 "POTHOLING" EXISTING UTILITIES** – "Potholing" an existing utility involves the excavation and exposure of the utility's substructure at the location of a potential conflict to determine the utility's

depth and size. Using the "pothole" measurements, the location and depth of the existing utility should be indicated on the profile of the improvement plans. In some cases the depth and location of an existing utility is best shown on a cross section.

If there is a strong possibility a conflict will occur between a proposed municipal utility line and an existing underground utility, and the owner of the existing utility line is unable to provide its exact elevation at the location of the interference, the Design Engineer for the proposed project should arrange to have the existing utility "potholed." It is recommended a survey party be on hand at the time a "pothole" excavation is made to accurately record the necessary measurements of location and depth (elevation). A representative of the owner of the underground utility should also be at the site of the "pothole" excavation.

**14-9 SHOWING EXISTING UTILITIES ON PUBLIC IMPROVEMENT PLANS** – All major existing above and below ground utilities should be shown on the public improvement plans in an accurate manner. The location of any existing utility parallel to and within 5 feet of any proposed municipal utility line or which crosses a proposed municipal utility line at an angle of 30 degrees or less should be determined with an accuracy of plus or minus one foot. The distances between existing underground utility lines and proposed storm drain lines, sanitary sewer lines, or water mains within 5 feet of one another should be dimensioned on the plans.

The horizontal or vertical alignment of a proposed facility requiring the permanent relocation of an existing utility line should be thoroughly analyzed before the alignment is finalized to determine if feasible options other than relocation are available.

Completed plans for proposed projects should clearly differentiate, insofar as possible, existing utilities that are:

1. Existing utilities to remain in place
2. Already abandoned in place
3. To be abandoned in place
4. To be relocated by others
5. To be removed by others
6. To be removed by the contractor
7. Salvage applicability and responsibility

The contractor's responsibility for the protection, removal, relocation, or avoidance of interference with existing utilities should be indicated on the plans.

UTILITY LETTER "A"  
("CONFLICT LETTER")

(date)

(name and address)

Re: Project Name

Dear (Name):

For your information, please find enclosed two sets of preliminary plans showing improvements to be constructed as part of the \_\_\_\_\_ project located \_\_\_\_\_, together with a partially completed Utility Information Form.

The anticipated advertising date for the subject project is \_\_\_\_\_.

On one of the copies of the enclosed plans, please verify the location, size and depth, if underground, of any of your company's facilities that may be affected by the proposed work. Within 15 days of receiving this letter, please return the marked up copy to this office. Also, please complete the attached Utility Information Form and indicate the estimated time schedule for completing any utility relocation work necessary as a result of this project.

If you desire further information concerning the proposed work, please call me at \_\_\_\_\_.

Sincerely,

NAME  
Title

Enclosures

cc: Town of Loomis, Town Engineer



UTILITY LETTER "B"  
("INTENT TO CONSTRUCT")

(date)

(name and address)

Re: Project Name

Dear (Name):

You are hereby advised that Developer within the Town of Loomis is planning the improvements of the \_\_\_\_\_ project in the near future.

Plans showing the improvements to be made are enclosed for your information. The anticipated bid date for the project is \_\_\_\_\_. It is expected that your facilities will be relocated prior to the start of construction (approximately three weeks after bid date).

If you do not expect your interfering facilities to be relocated prior to construction or desire further information concerning the proposed work, please call me at \_\_\_\_\_.

Sincerely,

NAME  
Title

Enclosures

cc: Town of Loomis, Town Engineer



**FORM 6D**  
**UTILITY INFORMATION FORM**  
(To be filled in by Engineer)

Date: \_\_\_\_\_

To: \_\_\_\_\_  
(SBC, PG&E, SPMUD, etc.)

From: \_\_\_\_\_  
(Name of Engineering firm)

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Developer: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Project: \_\_\_\_\_  
(Name of Subdivision, Street Address, etc.)

**TO BE FILLED IN BY UTILITY COMPANY**

Utility Representative: \_\_\_\_\_ Phone: \_\_\_\_\_

Date Plans Received: \_\_\_\_\_

Do facilities require relocation or removal? \_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, give location: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_

Time required to engineer project: \_\_\_\_\_ working days

Time required to schedule and complete construction after  
Payment of relocation cost (if required) \_\_\_\_\_ working days

TOTAL \_\_\_\_\_ working days

If poles, are they jointly owned? \_\_\_\_\_ Yes \_\_\_\_\_ No

If yes, joint owned with: \_\_\_\_\_  
(Pac Bell, SMUD, Citizens Utilities, etc.)

Signature of Utility Representative

Date

NOTE: This form is to be returned to Name of Engineer within 15 days.

